

# FLIGHT

## The AIRCRAFT ENGINEER AND AIRSHIPS

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Founder and Editor: STANLEY SPOONER

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### DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- Sept. 24. Essex Aviation Display at Hillmans' Aerodrome, Maylands, Brentwood.
- Sept. 24. No. 45 Sqdn. R.A.F. Reunion Dinner, at Overseas League Club House, Park Place, S.W.1.
- Sept. 25. Ladies' At Home at Sywell.
- Sept. 25. Yorkshire Trophy Air Race Meeting.
- Sept. 25. Gordon Bennett Balloon Race, Basle.
- Sept. 26. Charter Day Pageant, Hendon Aerodrome.
- Oct. 1. Bristol and Wessex A.C. Garden Party.
- Oct. 1-23. Berlin Sporting Flying Exhibition.
- Oct. 6. "Air Navigation." Lecture by Captain N. Macmillan, M.C., A.F.C., A.F.R.Ae.S., before R.Ae.S.
- Oct. 8-9. Chatham Air Display.
- Oct. 18. Aero Golfing Society: Celfon Challenge Cup, West Hill G.C.
- Oct. 20. "Flying Conditions on the West Coast of Africa." Lecture by Flight-Lieut. W. G. Pudney, before R.Ae.S.
- Oct. 27. "Aeroplane Covers and Wheels." Lecture by Mr. F. Fellowes, before R.Ae.S. (Joint Meeting with Inst. of Rubber Industry.)
- Nov. 3. "Civil Primary Training." Lecture by Mr. H. G. Travers, D.S.C., before R.Ae.S.
- Nov. 10. "Airscrew Design." Lecture by Mr. D. L. Hollis Williams, B.Sc., A.F.R.Ae.S., before R.Ae.S.
- Nov. 18-Dec. 4. Paris Aero Show.
- Nov. 24. "The Evolution of Aircraft Wireless Equipment." Lecture by Squadron Leader H. Leedham, O.B.E., R.A.F., before R.Ae.S.
- Dec. 1. "The Behaviour of Fluids in Turbulent Motion." Lecture by Mr. A. Fage, A.R.C.Sc., F.R.Ae.S., before R.Ae.S.
- Dec. 8. "Air Survey." Lecture by Lieut. J. S. A. Salt, R.E., before R.Ae.S.
- Dec. 15. "Airship Development Abroad." Lecture by Sqdn.-Ldr. R. S. Booth, before R.Ae.S.
- Dec. 15. "Lessons of the D.O.X." Lecture by Dr. C. Dornier, before R.Ae.S.
- 1933.
- Feb. 2. "Operation of Aircraft Over Tropical Routes." Lecture by A. Plesman, before R.Ae.S.
- Mar. 23. "Seaplane Research." Lecture by H. M. Garner, before R.Ae.S.

## EDITORIAL COMMENT



It now seems reasonably certain that the Bellanca monoplane known as the "Flying Nurse" has to be added to the already deplorably long list of Atlantic tragedies. We have ceased to talk about the bravery of those who set out to fly the Atlantic, and must think chiefly of their foolhardiness. The maxim *de mortuis nil nisi bonum* is a gracious one, and helps to preserve the decencies of life, but it loses some of its force when a regular craze arises for risking life on a useless act of bravado. If one refrains from comment on those who have thrown away their lives, one may do something to encourage others to follow the bad example. The victims of the Atlantic all made the attempt with their eyes open, and have no claims for special consideration when the dice turned up the wrong way for them.

### Atlantic Reactions

A particularly unpleasing feature of recent attempts on the Atlantic has been a straining after press publicity by including some unusual feature in the flight. The aeroplane "Flying Nurse" was described in the sensational press as a "flying laboratory," and it was alleged that the doctor who was on board would make a scientific study of the reactions of the pilot when under strain. Supposing that such observations would have any value, they might have been made during a flight where engine failure would allow at least a reasonable chance of survival. Then, to emphasise further the serious scientific side of this flight, it was announced that the woman passenger would leave the machine by parachute "in honour of Florence Nightingale"! Were there any prospect that the fate of these three unfortunate persons would deter others from a similar folly, we should have preferred to pass this matter over in silence; but, alas! there seems no prospect that this tragic burlesque will be a sufficient warning.

Fortunately, we do see signs that a feeling of indignation has been aroused in America which may develop into a healthy deterrent. The case of the Sikorsky amphibian known as the "Flying Family"

was worse than folly. Mr. Hutchinson, it is stated, was a very experienced pilot, and the same was said of his wife. Apparently their two little children had been up with them and had spent quite a number of hours in the air. This could not excuse the parents for taking the two children with them on an attempt at an Atlantic flight. The folly of the act may have been mitigated by the choice of an amphibian, which had the power to descend on either water or land, but the storms of the North Atlantic have forced more than one machine down, and a flying boat cannot live for long in a heavy sea. Help must reach it soon if the crew are to survive. Signor Locatelli in a Dornier "Wal" lived for about three days and nights afloat off the coast of Greenland, after being forced down by bad visibility in 1924, but his boat was crippled by the waves, and he would have been lost had not an American cruiser gone out to look for him. In this case the crew of the Sikorsky got ashore, but the machine was wrecked.

Then came the search. Several steamers left their proper work of sealing or whaling or fishing and devoted all their time to the hunt for the Hutchinson family and their companions. The loss in time and money must have been very considerable, as we have before emphasised, and the question arises whether anyone has the right to undertake a flight which may well cause such a dislocation of business. The frame of mind which says "I will take the risk, and if I get into trouble someone is sure to throw up his own proper business and spend his time in helping me" is not admirable. A truly scientific expedition of discovery may justify taking such risks, but the desire for notoriety cannot do so.

Worse was to follow. All available aircraft in that part of the world joined in the search. Among them was a machine flown by the famous German pilot, Herr Udet. He was not heard of for several days, and it was feared that he had sacrificed his life for the sake of the Hutchinson family. Yet even his loss, if he really had met with the worst, would have struck less horror to the mind than the thought of the death by drowning or by cold and starvation of the two little children, which was so narrowly averted.

This altogether deplorable incident has, we are glad to learn, at last awakened a feeling of indignation in the United States. It has been decided that no public reception shall be given to the crew of the Sikorsky on their return to the States. This is, perhaps, the worst punishment which could be inflicted on people whom we can only regard as publicity-mongers. We may hope, too, that it will have some lasting effect in discouraging others of like kidney from undertaking Atlantic flights. Refuse publicity to the "stunt merchant," and Othello's occupation's gone.

It is no easy matter in Great Britain to make the public and the sensational press distinguish between a flight which is really worth while and a flight which is a mere publicity stunt. Flying is the aspect of life with which FLIGHT is concerned, and we conceive it our duty (if we may apply to ourselves the comment of a great English poet about a great Greek poet) to "see life steadily and see it whole." The news editor of a popular daily paper, on the other hand, always sees life like the flicker of a bad film. Daily he is hypnotised by the news story of the day,

and is constitutionally incapable of distinguishing between the useful and the useless, provided only that there is a "thrill." The public is largely in the hands of the said news editor.

In the States, we imagine, this state of affairs is even more pronounced. We have received a letter from a correspondent in America, written before the anxious and costly search for the Sikorsky and the loss of the "Flying Nurse" occurred, which suggests that Great Britain should establish an airport for the Atlantic traffic in Co. Galway. Our correspondent suggests that this might well be looked on in Ireland as a friendly gesture which would tend to bring about a better understanding between Great Britain and Ireland. Presumably he thinks that such a gift, bringing great revenues in landing fees to the Exchequer of the Irish Free State, might be some compensation for all the alleged tyrannies practised on the Irish people by the people of Great Britain, and might cause Mr. de Valera to melt into forgiveness. Perhaps also such an airport might facilitate the emigration of Irish people to the United States; but whether such a result would be gratifying to the compatriots of our correspondent we have no means of guessing.

Then he goes on to suggest that a cup should be offered for the development of flying boats on the Ireland-Newfoundland route, and that a competition or race should be held each year, starting from Ireland one year and from Newfoundland the next. We can imagine the joy with which such an event would be hailed by the fleets of sealers and fishing boats in the North Atlantic.

If, however, the Atlantic part of this proposal be omitted, there is something attractive in the idea of a competition for large flying boats. There are plenty of parts of the world where a course could be laid out along which boats could fly with no serious risk of disaster to themselves or of dislocating the shipping of the area. The flying-boat squadrons of our own Royal Air Force are constantly carrying out flights in formation from one part of the Empire to another, as well as to foreign waters, and they have shown themselves very well able to take care of themselves. These flights are still regarded as being of the nature of tests, and no attempt at speed records has been made. The object has always been to show that flying boats can get from place to place with reliability. They have flown to schedule, but that schedule has never demanded any great hurry. Perhaps the time is now ripe for a great international flying-boat competition, with marks for various good qualities, of which speed would be one. Endurance, however, should be regarded as of more importance, and so should that rather elusive quality, seaworthiness.

Prince Bibesco, President of the F.A.I., has just offered a Cup for an air race round the world. The conditions make it open only to landplanes and amphibians. Flying boats are less developed than are landplanes, and a competition to stimulate their development at this juncture would probably be a very useful institution. The course might run from the Baltic through the Mediterranean to Australia, or down the Great Lakes of Africa, or by many another route along adequate inland waters. The Continents of North and South America would offer numerous interesting routes. But across the Atlantic—No.

# A World's Record?

## A "Vesta"—"Pegasus" Achievement

**W**HAT will, it is hoped, prove a world's record for altitude was established on Friday last, September 16, when Mr. Cyril F. Uwins, chief test pilot of the Bristol Aeroplane Co., Ltd., took a Vickers "Vespa," fitted with one of the new Bristol "Pegasus" engines, up to an altitude believed to be in the neighbourhood of 44,000 ft. (13,400 m.). At the time of going to press with this week's issue of FLIGHT, the sealed barographs had not yet been checked by the National Physical Laboratory, and so no world's record can definitely be claimed at the moment, but there is very good reason for believing that the existing world's altitude record has been beaten. This stands at 13,157 m. (43,100 ft.), and was established on June 4, 1930, by the American pilot Lt. Soucek on a Wright "Apache," with Pratt & Whitney engine.

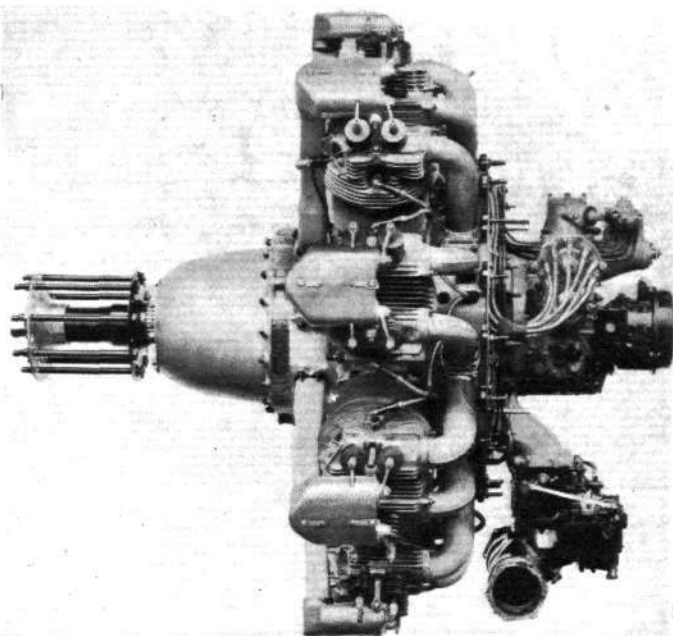
Mr. Uwins took off from Filton aerodrome, Bristol, about 1 p.m. on September 16, and alighted at Evesham shortly after 3 p.m., having run out of petrol. The flight was officially observed on behalf of the Royal Aero Club of the United Kingdom by Capt. Winters, of the Bristol Airport, Whitchurch, who took charge of the two sealed barographs when Uwins alighted. The barographs were then sent to the National Physical Laboratory, Teddington, where they were, as is customary, kept for 24 hours before the case was opened. As this 24 hours' period broke into the weekend, the result of the official examination and checking of the barographs was not known to us in time to be included this week.

The weather was rather misty when Uwins took off, and was doubtless partly responsible for him landing away from Filton when he ran out of petrol, as he must have been entirely out of sight of the ground for the better part of two hours and could thus easily lose his way. He can be congratulated on not having been carried out over the Bristol Channel during his flight, as he might well have been.

The machine used by Uwins in his altitude flight was a Vickers "Vespa." This machine was originally designed for operating from aerodromes situated up to 13,000 ft. above sea level, and to this end is provided with wings of



Mr. C. F. Uwins, Bristol's chief test pilot, who flew the machine.



THE BRISTOL "PEGASUS": For a new type of engine to have put up such a fine performance so soon after being put into production is a splendid achievement, and speaks well for the future of the new "Bristol" engine series.

unusually large area, a feature of the design which resulted in a very low wing loading. This was, of course, a great advantage in the altitude flight.

For his altitude flight Mr. Uwins had taken every possible precaution in the way of protecting himself against the intense cold and the rarefied air to be met with at such great heights. He wore electrically-heated clothes, and the oil tank was so arranged as to help to heat the cockpit. An oxygen apparatus enabled him to breathe in reasonable comfort, and by keeping well down in the cockpit he was exposed to a minimum of cold draught.

The altitude flight was made on special B.P. Plus spirit and "Aero Shell" lubricating oil. The K.L.G. plugs were fired by B.T.H. magnetos, and Short & Mason special instruments were carried.



THE VICKERS "VESPA": This photograph shows the machine flown by Uwins in the altitude record attempt. The Bristol "Pegasus" (supercharged) engine was fitted.





## The Boeing "Totem"

THE four-seater flying boat which forms the subject of the following notes and illustrations has been produced especially with West Coast of Canada conditions in view. These conditions are severe.

Machines are often out on operations for several months at a time, and then any maintenance work must be done by the pilot and engineer, the only workshop available being very likely that of some fish cannery situated, perhaps, some hundreds of miles up a rocky coast. In designing the "Totem" it was, therefore, necessary to aim at the greatest possible simplicity of construction, and also to provide such robustness that considerable rough handling by inexperienced helpers would not cause any damage. In trying to assess the merits of the machine, it is necessary to bear these facts in mind. For instance, the ratio of gross to tare weight is 1.48 (the machine carries 48 per cent. of its own weight as disposable load). This is not a remarkable value, certainly, but the need for rugged construction may easily explain it, and the ratio is no lower than that of many other aircraft which have done good work.

The "Totem" was developed last year by Boeing Aircraft of Canada, and it is not without interest to learn that it was designed by an Englishman, Capt. E. F. Elderton, who as far back as 1918 worked at the Rochester works of Short Brothers, Ltd. Owing to the need for guarding against rust and corrosion, stainless steels have been used extensively. For instance, all wing fittings, hull fittings, wing-tip float fittings, and tail fittings are of stainless steel, as are also such smaller items as bolts, nuts, pins, cotter-pins, etc.

During last summer the Boeing "Totem" was given extensive trials, which included alighting on and take-off from Garibaldi Lake with full load. It should be explained

that Garibaldi Lake is situated in the mountains, at altitude of about 5,000 ft. During the tests the "Totem" took off from the lake without difficulty. We are not aware what were the water conditions at the time, but

seems likely that the water was fairly smooth, with waves to help the machine into the air. It is thought that this demonstration has proved the suitability of the "Totem" for many purposes on the British Columbia coast, such as fishery patrol, forest patrol, mining and prospecting operations, and many others of the various uses to which aircraft can be put in developing the natural resources of a country like Canada.

### The Hull

The hull of the "Totem" is of conventional design, and is constructed of "Alclad," a metal "three-ply" material consisting of a central layer of duralumin sandwiched between two layers of aluminium. The hull frames are spaced approximately 17 in. apart and longitudinal stringers run from stem to stern along the hull bottom. The "Alclad" skin is riveted to frames and stringers.

The hull sides and deck are planked with sheet "Alclad" in which fore-and-aft corrugations are formed for stiffening. On the deck these corrugations suffice to give enough stiffness to allow the crew to walk on the deck, but on the sides the hull, also longitudinally corrugated, extra stiffening and bracing is provided by diagonal members between

frames. Five bulkheads divide the hull into six watertight compartments.

The cabin is in the forward part of the hull, ahead of the front spar of the wing, and one of the small photographs published shows that for such a small machine the cabin space is quite roomy. The seats are arranged two side-by-side pairs, and dual controls are provided

### THE BOEING "TOTEM" 300 h.p. "Wasp Junior"

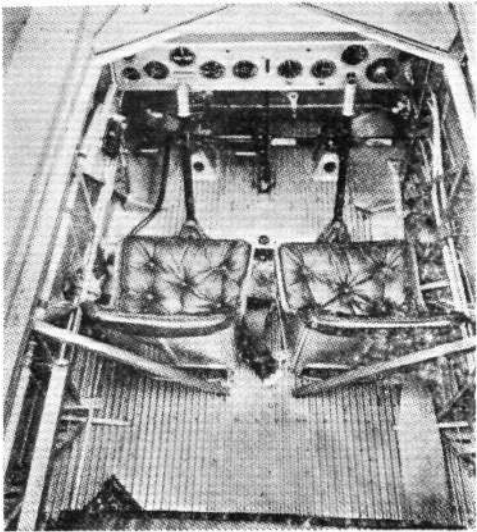
			Dimensions	
			ft. in.	m.
Length o.a.	..	..	32 9	10.00
Height o.a.	..	..	11 3	3.43
Wing span	..	..	46 0	14.00
Wing chord	..	..	7 6	2.29
Wing dihedral	..	..	..	1 1/2 deg.
Wing incidence	..	..	..	4 deg.
Cabin length	..	..	7 1	2.16
Cabin width	..	..	3 4	1.02

			Areas	
			sq. ft.	m <sup>2</sup> .
Wings and ailerons	..	..	310	28.8
Ailerons	..	..	34	3.16
Tailplane	..	..	30	2.79
Elevators	..	..	27.75	2.58
Fin	..	..	12	1.12
Rudder	..	..	13.5	1.25

			Weights	
			lb.	kg.
Tare weight	..	..	2,700	1,227
Useful load	..	..	1,300	591
Pay load	..	..	690	314
Fuel and oil	..	..	440	200
Gross weight	..	..	4,000	1,818
Wing loading	..	..	12.9 lb./sq. ft. (63.2 kg./m <sup>2</sup> .)	
Power loading	..	..	13.33 lb./h.p. (6.06 kg./C.V.)	

			Performance	
Maximum speed	..	..	122 m.p.h. (196.5 km./h.)	
Cruising speed	..	..	99.5 m.p.h. (160 km./h.)	
Landing speed	..	..	55 m.p.h. (88.5 km./h.)	
Initial rate of climb	..	..	834 ft./min. (4.23 m./sec.)	
Service ceiling	..	..	17,000 ft. (5,200 m.)	
Absolute ceiling	..	..	18,500 ft. (5,640 m.)	
Cruising range	..	..	400 miles (645 km.)	

These performance figures have been established during Canadian Government Official Tests.



Roomy accommodation is provided for four, including the pilot. Note the dual controls.

the occupants of the front seats. Diagonal members bracing the hull sides laterally occur between front and rear seats, where they are not in the way. The cabin flooring is in the form of corrugated metal sheet. The upholstery is in natural leather.

#### Wings

The monoplane wing is of the usual two-spar type, but is somewhat unusual in that the spars are of spruce, while the ribs and leading and trailing edges are of chromemolybdenum steel tubing, spot-welded together. The wing covering is fabric. At their root the wing halves are bolted to the top rails of the hull, and outboard the wings are braced by steel struts at rather a flat angle. One would imagine that what with the external wing bracing struts joining their lower ends to the hull on the chine, and with a planing bottom showing no flare or reversed curvature towards the chine, the boat would be extremely "dirty" at certain running speeds. Whether or not this is so we have not heard.

#### Tail Surfaces

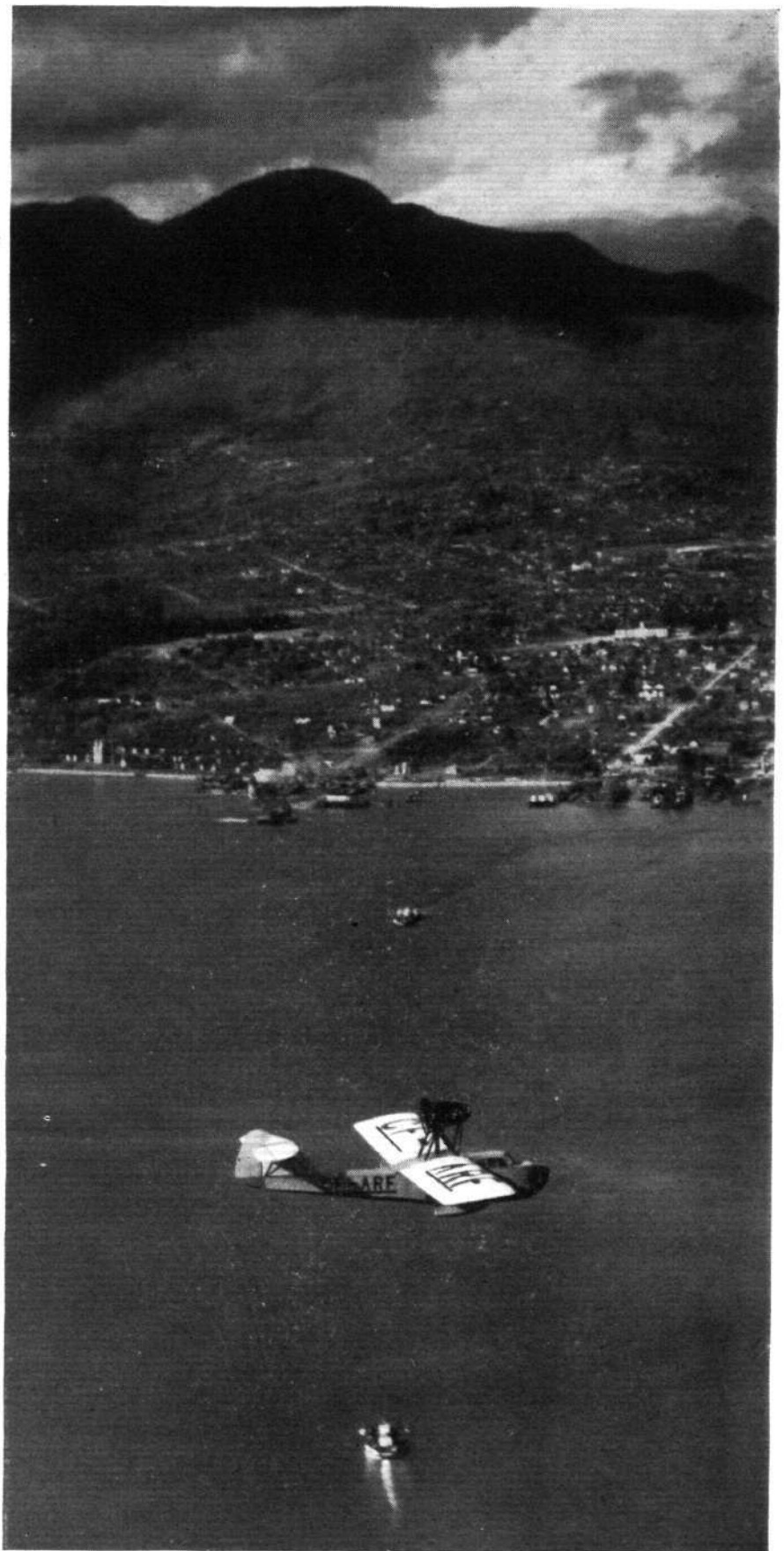
The fin, rudder, tailplane and elevator are of welded steel tube construction and fabric covered. The tailplane, it will be noticed, is placed at the top of the fin, and is strut braced.

A special water rudder is housed in the lower end of the air rudder, into which it can be drawn up, much in the manner of a centreboard in a boat. The water rudder is so arranged that it hinges freely in its slot, so that, should it strike an obstacle while the machine is taxiing, it rises clear until the obstacle has been passed.

#### The Power Plant

The Pratt & Whitney "Wasp Junior" engine is so mounted on struts above the wing as to drive a pusher airscrew. This is an arrangement which FLIGHT has long advocated and has the advantage, among others, of removing the airscrew from the vicinity of the cabin roof, so that there can be no risk of passengers or crew working through the open hatch getting anywhere near the revolving propeller. Another advantage is that the airscrew is as far as possible removed from the cabin, and, moreover, is behind the passengers, so that the amount of noise which reaches the passengers is reduced.

The fuel system includes a main petrol tank placed in-



THE BOEING "TOTEM": An interesting view of this Canadian-built machine in flight.

side the hull and a service gravity tank in the engine nacelle. The main tank is situated in that part of the hull which lies between front and rear spar frames. The fuel is raised by a power-driven pump (an auxiliary hand pump being provided) to the gravity tank in the nacelle. The overflow from the nacelle tank to the main tank passes through a sight feed on the instrument board. The engine is fitted with inertia hand starter.



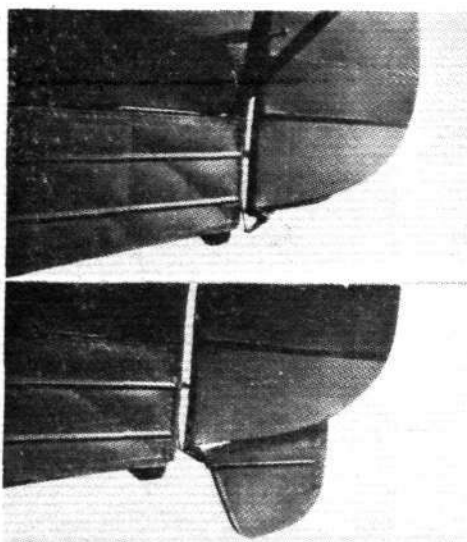
THREE-QUARTER REAR VIEW OF BOEING "TOTEM" : The "Wasp Jr." engine is installed as a pusher.

### Controls

The controls are so arranged that one set can be removed if dual is not required. The usual control stick and foot bar operate the control surfaces via steel tube pull-and-push rods carried on special roller bearings. The rods which operate the elevator and the tailplane trimming are neatly arranged inside the fin, so that a few feet of rudder rod is all that is exposed.

It is reported that on tests the machine has been found to handle nicely both in the air and on the water. If the engine is suddenly shut off during flight, the machine automatically drops its nose and, after about three slow oscillations, settles down to a steady glide. At cruising speed the machine is said to fly "hands and feet off."

It is not without interest to compare the "Totem" with the Saro "Cutty Sark," which is the nearest British machine in power, weight and wing area. The "Cutty Sark" has

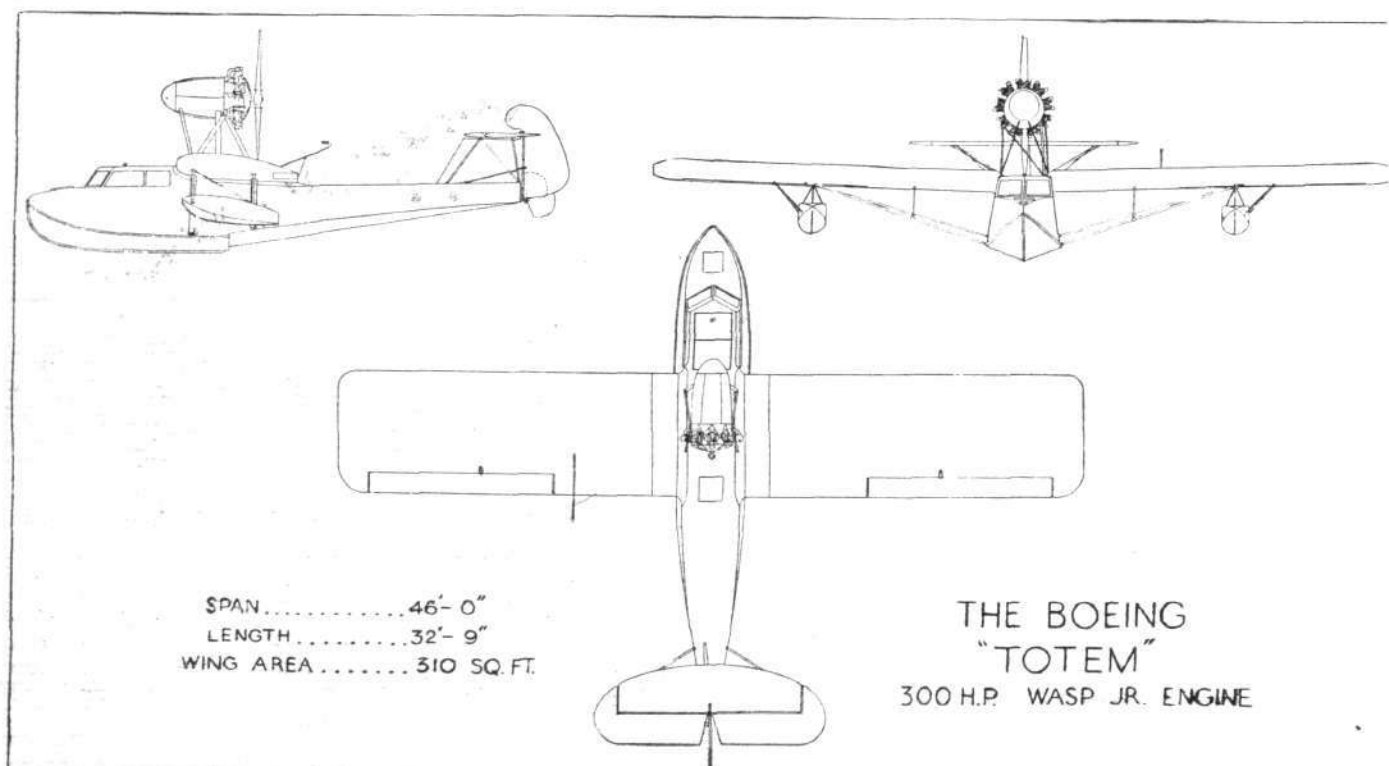


A Retractable Water Rudder is a feature of the "Totem." When retracted the Water Rudder disappears into the Air Rudder.

a smaller gross weight (3,700 lower power (210 b.h.p.) and 1 wing area (320 sq. ft.). Thus would expect the "Cutty Sark" have a lower top speed and a lower landing speed, which act it has. The speed range of the machines is almost identical. ratio of gross weight to tare w of the "Cutty Sark" is better that of the "Totem." The mini drag coefficient of the two mach as expressed by the Everling "F Speed Figure," is almost ident

this figure being  $\frac{\eta}{2k_D} = 12.77$  for

"Totem" and 12.23 for the "C Sark." It is interesting to find apparently there is little difference drag between the strut-braced si engined "Totem" and the cantile twin-engined "Cutty Sark."



THE BOEING "TOTEM" : General Arrangement Drawings.



# THE WEEK-END'S MEETINGS



Lt. Col. L. Strange with his three-seater "Spartan" ("Hermes IIB"). A trinity which won the Isle of Thanet Cup. (FLIGHT Photos.)

## THE THANET AIR RACE

THE race as originally arranged should have taken place on Saturday, September 17, but unfortunately shortly before it was due to begin a sea fog came down, enveloping that particular part of Kent and making flying conditions quite impossible. Notwithstanding this, however, some eight visiting aircraft reached Manston aerodrome during the morning, and all visiting pilots, together with their passengers, were entertained to lunch in the R.A.F. Mess with that hospitality for which the officers at Manston have become so well-known amongst civilian pilots. After lunch about six aircraft found their way over to Nethercourt aerodrome, but the rapid deterioration of the weather caused the others to remain where they were, and eventually at 4 o'clock a postponement of the meeting to the following day was announced.

Sunday morning broke fine and—doubtless to the intense relief of the organisers—without a sign of mist or fog.

Once again Grp. Capt. Sidney Smith and his officers extended their hospitality very cordially, and lunch was enjoyed by the visiting pilots at Manston before a move was made to Nethercourt aerodrome.

Owing to the postponement from the previous day the crowd was cheated of the demonstration of formation flying on Vickers "Virginia" aircraft, which was to have been made by the members of No. 500 (County of Kent) (Bomber) Squadron during the course of their training exercises.

The opening of the programme thus fell to the lot of Mr. P. E. G. Sayer, who had again flown from Brooklands to demonstrate the "must-be-seen-to-be-believed" per-



The Isle of Thanet Cup (centre), replica (left) and Pav Cup (right). (FLIGHT Photo.)

formance of the Hawker "Fury" (Rolls "Kestrel"). With a roar he was off and, almost before the crowd had realised it, was climbing steeply, rolling as he continued to climb. A beautifully executed half roll from the top of a loop completed the climb, following which came dives and zooms with rolls to the right and left thrown in as the "Fury," unabated, continued to climb. The demonstration was completed with an exhibition of



Mr. Edgar Percival (right), flying Lt. Com. B. Leake's "Gull" ("Hermes IV"), gained second place in the race and the Pav Cup for the best performance. (FLIGHT Photos.)

continuous slow rolling, inverted flying, a very slow flight at low altitude across the aerodrome, and a neatly executed slow landing.

In the meantime the competitors for the Thanet Air Race had filled up (not personally!) and were in readiness to taxi out to the starting line.

The course, slightly changed from that previously planned, took the competitors from Nethercourt to North Foreland lighthouse, to Reculvers, to the vane-less windmill at Sarre, and thence to the petrol filling station by the side of the aerodrome. This circuit was flown three times, making a total distance of 72 miles.

First away was Lt. Col. Strange with a youthful passenger on TR, his "Mark II Spartan" 3-seater ("Hermes IIB") engine, but in different guise on this occasion. The small centre section tank had given place to the more normal large tank, the rear cockpit had been thrown open but was not so fully occupied as on the



An amusing contrast was provided by Mr. Hudson's 1902 Oldsmobile—still very mobile—and the Hawker "Fury" ("Kestrel")—still more mobile! (FLIGHT Photo.)

previous day by a well-known "raconteur" and a cousin, of parachute fame, from across the ocean. The centre section and wing root fairings had disappeared (not in this instance because of the handicappers!). The "Klemm" ("Cirrus III") CI, co-piloted by Mrs. Fairlie and Mr. Kirsch, closely followed TR. At short intervals YL, Mr. Sparrow on a "Moth" ("Gipsy I") and HR, Mr. Windsor with passenger on a "Moth" ("Gipsy II") were off. Then followed a gap of nearly 9 min. before Mr. Percival on UR, Lt. Com. B. Leake's good-looking

# THE THANET AIR RACE

Reg'n. Mk.	Pilot	Aircraft and Engine	Starting Time	Finishing Time	Average Speed	Place
TR	Strange ..	"Spartan 3-st., Mk. II" ("Hermes IIB")	min. sec. 0 00	min. sec. 44 48	m.p.h. 96½	1st
CI	Mrs. Fairlie & Mr. Kirsch	"Klemm" ("Cirrus III") ..	0 55	46 09	95½	5th
YL	Sparrow ..	"Moth" ("Gipsy I") ..	2 39	45 27	101	3rd
HR	Windsor ..	"Moth" ("Gipsy II") ..	3 51	45 45	103	4th
UR	Percival ..	"Gull" ("Hermes IV") ..	14 09	45 09	139¼	2nd
WH	Styran ..	"Swift" ("Gipsy III") ..	16 23	Retired	—	—

"Gull" ("Hermes IV"), was away to the drop of the starter's flag, leaving Mr. Styran, on WH, the small but fast "Comper Swift" ("Gipsy III"), to depart 2 min. 14 sec. later.

Just before the scratch machine WH started, TR rounded the turning point at the petrol filling station, flying low and making good time. CI, YL, and HR followed in order, and then a gap before UR appeared, going well and also making good time. WH failed to appear as soon after UR as was to be expected, but in a few minutes came into sight from off the course and retired. Mr. Styran stated later that his machine was not running quite as he liked it, and he had flown wide of the course on his way in so as not to get in the path of his fellow-competitors.

At the finish of the second lap the same order was maintained, TR and UR still doing well, whilst YL had closed up on CI.

A few minutes' wait and all eyes were directed to the finishing line. Lt. Col. Strange arrived first, followed 21 sec. later by Mr. Percival on the "Gull"; third place being taken 18 sec. later by Mr. Sparrow. Fourth and fifth places were taken by Mr. Windsor and the co-pilots of the "Klemm," the whole field thus arriving home in 1 min. 21 sec. (Surely a handicapping triumph.—ED.)

Details of the handicap allowances and speeds are given in the table above.

A tribute for the way in which the race went off without a hitch should be paid here to the Clerk of the Course, Wing Com. L. F. Forbes, the R.A.F. officers who for the second time manned the turning points, and the pilots of the two "Atlas" aircraft who by means of radio telephony so quickly transmitted to the Clerk of the Course the "all clears" from the turning points. The excellent aerial photographs of the turning points which were displayed on the notice board undoubtedly were of great assistance to the competitors.

A second demonstration of the "Fury" by Mr. P. E. G. Sayer now took place, and was equally, if not more, appreciated by the large number of spectators in



Many officers from Manston assisted at the meeting. On the left is Sqd. Ldr. T. F. W. Thompson (No. 500 Bomber Sqd.), next Mrs. Perrin, Wing Com. L. F. Forbes (Clerk of the Course), H. E. Perrin (Sec. R.Ae.C.), Miss Perrin. Grp. Capt. Sydney Smith (soft hat) rests on his shooting stick (centre of group) and Mrs. Smith is five places to his right (with white gloves). Sqd. Ldr. D. Mullholland (in check cap) acted as a Judge, as did Sqd. Ldr. S. Toomer, whom he is hiding. On the extreme right is Mr. F. Rowarth, who with Capt. W. Dancy made excellent work of the handicapping. (FLIGHT Photo.)



the enclosures—and by the roadside. Suffice it to say, Mr. Sayer's handling of the "Fury" was greatly complimented on all sides by the many experienced R.A.F. officers who were present.

Apart from much activity in joy-riding on the part of Capt. C. D. Barnard with his well-known "Spider" and the Thanet Aviation, Ltd., with their Avro, a very enjoyable afternoon was brought to a close by the distribution of the prizes.

Grp. Capt. Sydney Smith, in calling upon the Mayor of Ramsgate, Alderman C. Nixon, J.P., to present the prizes, expressed the regrets of Sir Philip Sassoon at not being able to be present, and a great hope that in the near future the Isle of Thanet would have a municipal aerodrome of its own. The Mayor, in reply, said that all were sorry that Sir Philip Sassoon had not been able to come. He explained that his own views on aviation had of late undergone a great change. He felt that sooner or later a municipal aerodrome would have to be established, and he proposed to do his utmost to bring it about as soon as possible. (We should like to con-

gratulate the Mayor on his wise views.—ED.) He then proceeded to hand to Lt. Col. Strange the handsome Isle of Thanet Cup, a replica and a cheque, cheques to Mr. Percival and Mr. Sparrow, and the Pav Cup to Mr. Percival who had achieved, in addition to the fastest speed in the race, 139½ m.p.h., the best performance, other than the winner's, on handicap.

The Isle of Thanet Cup was given by Vye & Son, the Kentish Grocers, the replica by the Broadcast Relay Service, and the Pav Cup by Mr. H. E. Bawn.

The meeting over and the weather now commencing to be unkind the visiting aeroplanes hastily departed. The writer was fortunate enough, owing to the good services of Mr. Percival and his speedy, comfortable "Gull," to find himself close handy to home at Croydon aerodrome 38 min. later! The trip was very bumpy, but the "Gull" appeared to need little attention by way of maintaining trim, and even though not at present having an exhaust pipe it is not the possessor of an undue number of "decibels."

W. D.

## A WOMEN'S FLYING MEETING

THE Women's Engineering Society, who at the suggestion of Lady Bailey have formed an aviation section, held an air meeting in connection with their Tenth Annual Conference at Atlantic Park, Eastleigh, near Southampton, on Sunday, September 18. Owing to a very regrettable streak of misplaced puritanism on the part of the municipal authorities, the organisers were not allowed to bring the general public into the meeting, except free of charge, with the result that they had to content themselves to a small but select party of invited guests.

Atlantic Park is quite an excellent aerodrome, and we hear rumours that it may shortly be the home of one of the well-known South Coast flying clubs. The hangars are still in reasonably good repair and bear romantic evidence, in the shape of notices in many languages, of the days when the shipping companies had perforce to use it as a dumping camp for the crowds of European emigrants who fled their own countries after the war to seek fortunes in the U.S.A. (who knows but what it may have sheltered Scarface Al or others of his ilk!). Visitors by air had, we gathered, a very sticky trip, as the clouds were down on the hills in most parts of the country, and this kept the numbers of aircraft very low, but those who came by road fared better, for despite rain which made things unpleasant they had no difficulty in finding the way; A.A. notices at every corner led them straight to the aerodrome.—Mr. Ivor McClure, who has made the aviation department of the A.A. what it is, surely deserves recognition as one of aviation's benefactors.

The Dowager Lady Swaythling opened the meeting, and the women who had flown down were presented to her. These included Miss Aitken, Mrs. Victor Bruce, Mrs. Chalmers, Miss Spicer, and Lady Bailey. Mrs. Sheldermine, who had nobly come all the way from London by road, Mrs. Mollison, who arrived somewhat later in her special "Moth," and last, but not least, Miss Mollie Olney, of the Northamptonshire Aero Club, to whom had been entrusted the organisation of the flying programme of the meeting. Lady Swaythling graciously repeated part of her speech for the sound film people, whose inefficiency prevented them getting their record at the right time, but whose nerve did not prevent them bluntly requesting a repetition of the speech! The programme began with a fly-past, and this was led by Lady Bailey in



(L to R) Miss Olney (who organised the flying), Miss Spicer (a licensed ground engineer), Mrs. Victor Bruce, Mrs. Mollison, Mrs. Sheldermine (Col. Sheldermine, the D.C.A., was unable to be present), Mrs. Chalmers, Mr. J. A. Mollison.

her "Puss Moth" ("Gipsy III"), which, incidentally, she landed more gently and artistically than we have seen most men land similar machines; following her came Mrs. Victor Bruce, with Flt. Lt. Pugh, in her "Bristol Fighter" (Rolls "Falcon"); Mrs. Micklethwait, "Moth" ("Gipsy I"), who had flown down in easy stages from Yorkshire; and Miss Aitken, who had brought her "Moth" ("Gipsy I") over from Gatwick.

Shortly after the fly-past Mrs. Mollison arrived, and was presented by the President of the Women's Engineering Society, Miss E. M. Kennedy, with a very complete Rotax lighting set, as a wedding present. Mrs. Mollison had spoken during the Tenth Annual Conference of the Society, in connection with which this present meeting was being held, and had voiced the opinion that women had far better stick to the work for which they were fitted than attempt to get jobs as ground engineers (a statement with which we heartily concur—ED.). Her affirmation that one G.E. could easily look after 20 aeroplanes does not seem quite so sound, however, and we cannot imagine the hard-working G.E.'s of the flying clubs about the country being very pleased at such a contention. However, despite her views, Mrs. Mollison has accepted Vice-Presidency of the Society, and will therefore be the next President.

Mr. J. Mollison himself arrived in his well-known "Puss Moth," *Heart's Content*, shortly afterwards.

A local branch of the S.M.A.C. showed well the advance which has been made in the construction of model aeroplanes during recent years, and many of their models made extremely stable and long flights despite the gusty wind.

Bombing from the air caused some considerable



The Dowager Lady Swaythling welcoming Lady Bailey. Wing Com. Cave-Brown-Cave (with megaphone) acted as announcer.



Mrs. Mollison receiving a wedding present (a Rotax lighting equipment) from the President of the W.E.S., Miss E. M. Kennedy.

amusement, although the target—a capable looking young woman in breeches, on a motor-cycle—was never in much danger of being befloured. As much cannot be said for the Gaumont news van, and one shot at least came within a few inches of making history by knocking the camera off the van!

Throughout the meeting, the social details of which had

been so ably arranged by Miss Haslett, Wing Com. Cave-Browne-Cave acted as a most "megeuphonious" announcer, so that at all times the spectators knew who was flying and why. At the conclusion he indicated a spot where people might queue up for joyrides with Miss Aitken—they needed no second invitation!—and kept Miss Aitken busy for a long time.

## THE HART TROPHY

**T**HE final of the competition for the Trophy presented by Mr. Edgar F. Hart for annual competition between the Associated Light Aeroplane Clubs was flown off at Hanworth on Sunday, September 18, between the Lancashire Aero Club, who had defeated the Yorkshire Aeroplane Club by

one point, and the Hanworth Club, who had walked over the Northants Clubs and beaten the Berks, Bucks and Oxon Club.

The rules call for teams of six members, three of whom have flown more than 50 hr. solo and three who have not completed 50 hr. Any standard light aero-



Mr. Alan Goodfellow (left) and Mr. M. L. Bramson, for Lancashire and Hanworth Clubs, respectively, clearing the tape with commendably little to spare when competing for the Hart Trophy. (FLIGHT Photos.)



plane may be used, but wheel brakes are not allowed and the same machine must be used by all the members of competing teams. Competitors must climb to 1,000 ft., close the throttle and make a landing over a tape 5 ft. high, coming to rest as near as possible to a mark situated between 500 and 750 ft. from the tape. The "under 50" competitors are accompanied by an instructor from the rival club, but, in the event of the instructor finding it necessary to open the throttle, are disqualified. Disqualification is also entailed by a competitor breaking the tape or coming to rest outside the landing area, which measures, at the discretion of the Judges, 500-750 ft. long by 90-180 ft. wide.

The officials were Capt. A. G. Lamplugh and Mr. J. Jeffs, as judges; Mr. E. Hart and Mr. J. Beard, as starters; Mr. J. Cantrill and Maj. G. Petit, as measurers. Mr. F. G. Yuill acted as air observer for the Hanworth competitors, and Flt. Lt. J. B. Wilson for the Lancashire competitors.

The Lancashire team arrived by air from Woodford and were entertained to luncheon in the Club. The weather was far from pleasant, cloud being at about 600 ft., and rain falling with little intensity but considerable wetness.

Mr. M. L. Bramson opened the competition for Hanworth. He was awarded 9 marks for approach and 9 for style of landing, figures which were only beaten by Mr. Hall, who gained full marks. Mr. Bramson brought the "Cirrus Moth," which the Hanworth Club were using, to rest 10 ft. from the mark, and was therefore awarded 10 less 1 marks for distance, making his total 27. Mr. A. Goodfellow followed on a "Hermes Avian" with a score of 9-8-6=23. Flt. Lt. Allen undershot and was disqualified. Mr. R. F. Hall then equalled Mr. Bramson's score with 10-10-7. Capt. Lessel Hutcheon had the misfortune to lose sight of the aerodrome in the low cloud and had to make a somewhat sharp turn from a low height on to the tape, scoring 5-5-8, to which Mr. K. Twemlow replied with 8-9-5, or 22. At this point things looked bad for Hanworth, Lancashire having scored

72 points to their 45 and the senior division all having flown.

As things turned out, however, the juniors, or rather one junior, very nearly pulled things round. Messrs. Pearce and Walters for Hanworth were disqualified, the former for breaking the tape and the latter for running into the (theoretical) fence. Messrs. Gotch, Templeton and Gleave all demolished this same fence, and the only junior to score was Lt. L. R. Warton, of the King's Dragoon Guards, who gained 22 marks for a very steady piece of flying: 9-8-5. Lt. Warton has done less than 10 hr. solo.

This left the result Lancashire 72, Hanworth 67.

Lancashire				
Name	Approach	Style of Landing	Distance from Mark	Total
A. Goodfellow .. ..	9	8	6	23
R. F. Hall .. ..	10	10	7	27
K. Twemlow .. ..	8	9	5	22
A. F. Gotch, Templeton, Gleave .. ..	—	—	—	disq.
Hanworth				
M. L. Bramson .. ..	9	9	9	27
Flt. Lt. R. H. Allen ..	—	—	—	disq.
Capt. Lessel Hutcheon ..	5	5	8	18
S. M. Pearce, K. Walters ..	—	—	—	disq.
L. R. Warton .. ..	9	8	5	22

After tea Maj. Petit, the Chairman of the Hanworth Club Committee, asked Mr. Hart to present his Trophy, and congratulated Lt. Warton on his masterly exhibition. Mr. Alan Goodfellow said a few words as to the object of the Trophy.

Capt. Lamplugh was then called upon to present Capt. Hutcheon's prize, a cocktail set in the shape of an aeroplane, to Lt. Warton.

The Lancashire team then departed by air with the Trophy and a perfectly beastly weather report.

# Private Flying & Gliding

## CHANGES AT CHELMSFORD

Visitors to Chelmsford will be interested to know that Mr. G. W. Higgs has resigned both his connection with the club and also his position as Chairman of Air Transport Sales & Service, Ltd., Mr. H. M. Talbot Lehmann remaining as residing authority. The club at Chelmsford has been through many vicissitudes, but there is no doubt that there is a very good opening for a well-run club in the district, and we hope that the development that was planned will not be entirely shelved, for the aerodrome is an excellent one and the amount of keenness for flying in the neighbourhood appears to be very considerable.

## READING AERO CLUB

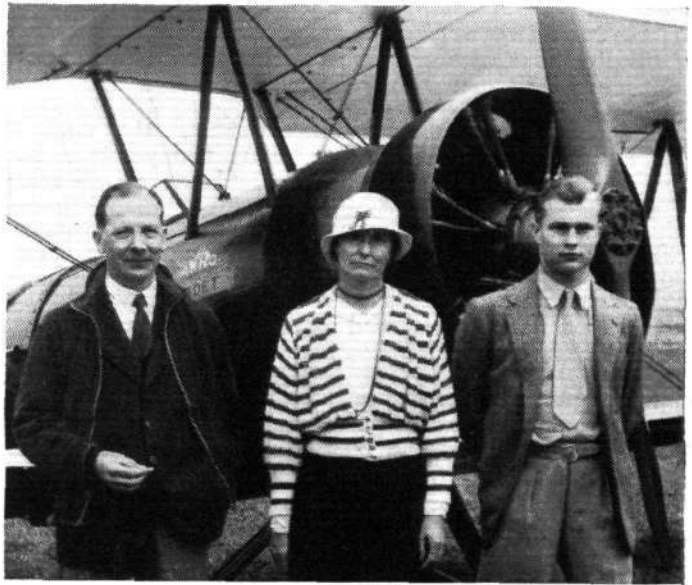
Visitors to Woodley aerodrome on Saturday, September 24, should make a point of going to the Reading Aero Club-house, as the occasion will be one of some importance owing to the invitation which has been extended to the staff of Reading University. Our Universities have long been interested in flying, as witness the R.A.F. squadrons which have been formed both at Cambridge and Oxford, and it is therefore not surprising to see this interest of the staff of Reading. It is perhaps not too much to hope for, that failing the establishment of an official R.A.F. squadron for the University, the staff themselves may perhaps start a club of their own under the auspices of the Reading Aero Club.

Mr. C. W. Scott, who is on his way to Burma, reached Constantinople on Monday, September 12. Mr. Thordarson, the pupil who was mentioned in last week's notes as having come from Iceland, made a successful first solo flight, and the Marquess of Clydesdale has placed an order with Phillips & Powis for a new "Moth" with a "Gipsy III" engine.

## THE BERKS, BUCKS AND OXON CLUB

On Saturday, September 24, the Berks, Bucks and Oxon Club will be holding an "At Home" at Woodley

aerodrome, Reading. The President (the Earl of Cardigan) will be present to receive the guests, and besides the Garden Party there will also be an Open Race for a magnificent cup, a Motor Gymkhana, Aerobatics, a Parachute Descent, and a Concours d'Elegance. All visiting pilots will be welcome, and will be the guests of the Club for the afternoon.



Mr. and Mrs. Gardner and their son with his Avro "Cadet." Mr. Gardner is taking an extensive course at A.S.T., Hamble, where his parents also underwent a course of instruction recently.



# SCARBOROUGH AERO CLUB

High wind interfered with flying to a considerable extent on Sunday, September 18, so that very little instructional flying was done. Numbers of visitors were, however, taken up for passenger flights, and several visitors flew over from various parts of the country during the week. Mr. and Mrs. Micklethwait came from Yeadon; Mr. and Mrs. Deterding, Miss D. Tyzack and Mr. Dawson from the Northampton Club at Sywell, and Maj. Shaw from Yeadon. Several pupils have made their first solo flights, while three are ready to take their "A" certificates.

# BROOKLANDS

Over 70 hr. flying were done during the last week at Brooklands, and several new members joined the club, amongst them being Capt. Smith, who is home from Egypt. Mr. Parashar, an Indian pupil, has completed the tests for his "B" licence. Mr. Millett, of the Press Aero Club, has put in the necessary solo time for his "A" licence, while Mr. Iams, of the same club, hopes shortly to be doing the same thing. Another pupil who has completed his height test is Mr. Williams, of the College of Aeronautical Engineering Aero Club. Mr. Bartlett, who will soon be starting on a flight to Nyassaland, has been having some advanced dual prior to his departure. Personal Flying Services have been busy with their Junkers, making several trips to the Riviera and to Scotland. The Brooklands Aero Club machine has been in great demand, several members having made extensive cross-country flights during the week. The Junior Car Club held a dance at the Aero Club during the evening on September 17 as a conclusion to the meeting which they had had on the track during the afternoon and as a prelude to the night trial which they started at midnight. An innovation in ground instruction is the starting of classes for boys for which very low fees indeed are charged. A comprehensive curriculum has been mapped out, including "Rigging," "Theory of Flight," and "Navigation." It is hoped that these will increase—if such a thing is possible—the air-mindedness of the modern youth.

# MAIDSTONE AERO CLUB

The Sunday dance held by the Maidstone Aero Club on September 18 was well supported and enjoyed by a large number of people. A landing competition is being held next Sunday at 2.45 p.m. for a cup presented by the club, and many members spent last Saturday practising for this competition. Those requiring accommodation in the new row of lock-ups are advised to make early application, the prices asked for these being £2 15s. per month for a "Puss Moth" and £2 10s. per month for an ordinary "Moth." Commencing October 2 the club will hold an "At Home" on the first Sunday of each month. This first occasion will be a ladies' "At Home," and all those interested in flying, whether members or not, will be very welcome.

# BRISTOL AIRPORT

Both Mr. Cliff, of Phillips & Powis, Ltd., and Mr. W. Cope, of Norman Edgar & Co., have been very busy operating their taxi services to places like London, Leicester, Coventry, Torquay and Cardiff. Mr. Cope is well known at Bristol, as for the past two years he has been assistant instructor to the club and has trained some 30 pupils. It has been found, however, impossible to retain his services during the winter months, and members will be pleased to hear that he has found this new employment, which will be a means of retaining his services at the Airport. The chocolate service inaugurated by J. S. Fry & Sons, as reported in FLIGHT for September 16, is continuing to function satisfactorily with machines chartered from the Airport. Private owners are reminded of the Garden Party to be held by the Bristol and Wessex Aeroplane Club at the Airport on October 1. All visiting pilots arriving by air will be the guests of the club, not only to lunch and tea, but also to a dance in the evening.

# A HARD-WORKED "MOTH"

The following letter, received by the Managing Director of the de Havilland Aircraft Co., Ltd., is enlightening as to the work being done by aircraft made by them in the hands of the Johannesburg Light Plane Club:—

## A WONDERFUL VETERAN.

You will, no doubt, be interested in the figures given below, which are taken from the log books of one of our machines.



Mr. Thordarson (of Iceland) being congratulated by Lt. Com. C. W. Croxford, R.N., the Chief Flying Instructor of the Phillips & Powis school at Reading, after making his first solo flight.

This plane, a "Gipsy I Moth" (ZS-ABM), was graciously presented to our club by that great English sportsman, Lord Wakefield of Hythe. The actual presentation ceremony was conducted by His Excellency the Governor General, the Earl of Athlone, G.C.B., G.C.M.G., G.C.V.O., D.S.O., on behalf of Sir Charles Wakefield (as he was then), at an Air Display given here by the South African Air Force on October 19, 1929. It was christened "Sir Charles Wakefield," and has been affectionately known as "Sir Charles" ever since, even to our native servants, who always refer to it as "Shir Shals."

"Sir Charles" was given in trust to us to be of service in promoting air-mindedness in South Africa, and I think you will agree that she has—here are her records:—

	1929	1930	1931	1932
January .. .. .	—	72.55	91.20	62.15
February .. .. .	—	81.30	101.30	46.00
March .. .. .	—	74.45	83.00	76.55
April .. .. .	—	63.20	67.20	42.10
May .. .. .	—	58.15	101.20	64.05
June .. .. .	—	56.20	81.25	59.50
July .. .. .	—	70.25	63.45	41.15
August .. .. .	—	79.05	82.20	—
September .. .. .	—	36.35	80.30	—
October .. .. .	26.15	81.30	36.10	—
November .. .. .	65.10	64.50	87.40	—
December .. .. .	80.15	55.00	25.10	—
Total .. .. .	171.40	794.30	901.30	392.30

= 2,260.10 hr. (33 months)

Therefore, based on an average speed of 75 m.p.h., she must have flown at least 169,500 miles, but that does not by any means represent the real value of her achievements. She has soared aloft at the tender mercies of *ab initio* soloists galore—later to be guided by them to all corners of this great sub-continent. She has flipped almost everything from pigmies in perambulators to plutocratic peers, including parsons, philanthropists, pathologists and "iced prawns."

She can only be described as a wonderful veteran, and I would be interested to know if any other club can claim such a record for one machine—I doubt it.

Her maintenance costs have been absurdly low, and I think it speaks volumes for D.H. products.

(Sgd.) S. S. HALSE (Club Captain).

# Air Transport

## ALASKAN AIRWAYS

Pan-American Airways take over Operation

PAN-AMERICAN AIRWAYS announce that a programme for reorganisation of air transport lines in Alaska has already begun with the purchase of 2,500 miles of airways now in operation. Operations personnel drawn from the southern international lines of Pan-American Airways System have already been sent to Alaska to take over, consolidate and expand these lines serving a territory of more than a half-million square miles.

Beginning September 1, 1932, the lines are now operated by Pacific Alaska Airways, Inc., a wholly owned subsidiary of Pan-American Airways Corporation, which is taking over all assets, business, and U.S. mail contracts of Alaskan Airways, Inc., a subsidiary of The Aviation Corporation of Delaware.

The same system of operations used on the 22,000 miles of the Pan-American Airways System in the West Indies, Central and South America, will be installed as soon as practicable, giving the pilots of aeroplanes two-way radio communication and furnishing the complete reports of the United States Weather Bureau Stations in Alaska and all other data essential to safe air transportation over the terrain covered.

Present schedules are to be maintained, and improved wherever possible. New lines will be opened as rapidly as conditions permit, to serve business and tourist travel throughout this important American territory.

"We acquired these lines," state Pan-American Airways, "because the vast expanse and geographical peculiarities

of Alaska make it especially suited to air transportation and to the Pan-American system of operations. More than \$300,000 has been invested in Alaskan aviation, but methods used during two years of operations have not been completely successful. Operation methods used on Pan-American's southern international lines have solved almost identical problems. It is planned to co-ordinate and unify the Alaskan routes, maintaining the type of air transport essential to the future development of the territory. The development of the air routes in Alaska will be carried out in accordance with the well-established policies of the United States Post Office Department, in an endeavour to make these routes profitable to the United States Government, and more effectively to serve the peoples of the territory of Alaska and the United States.

"Alaska's large industries are located in widely-separated areas. Fur trapping, reindeer grazing, gold and other minerals, lumbering and fisheries, account for most of its commerce with the United States, which totals over \$83,000,000 yearly. A growing tourist trade brings as many as 36,000 people from the United States yearly.

"These industries will expand rapidly if provided with adequate transportation, but in the entire half-million square miles of Alaska there are less than 1,000 miles of railroads and 1,500 miles of wagon roads. Many of the sled roads and trails are impassable during a great part of the year. Only regular, dependable air transports, operating on regular schedule throughout the year can solve Alaska's transportation problem."

## AUSTRIA'S AIR LINES

GENERAL information on European airways is mostly confined to those of Great Britain, France, Germany and Holland, and the activities of other countries—especially in Central Europe—are not perhaps so widely known. We think, therefore, that the following information—which we have obtained from data collected by *Shell Aviation News*—regarding Austria's airways may be of interest to our readers.

It has long been recognised that air traffic, if properly conducted, provides a ready means of national economic expansion for any nation possessing its own aircraft operating company, since it not only fosters trade by facilitating the constant association of business people, but leads to the opening-up of new and, in most cases, vastly accelerated routes of communication.

Austria, with its glorious historical background, the natural beauty of its countryside and its focal position in Central Europe, has not fallen behind its powerful neighbours in the operation of an efficient national air transport system, as in the Oesterreichische Luftverkehrs A.-G. (O.E.L.A.G.) it possesses a very successful commercial aircraft operating unit which carries the nation's urgent, perishable or precious mail and freight, as well as providing a quick means of conveyance for those travelling for business or pleasure.

Formed in 1923, the company operated during that and the following year a service between Vienna and Munich and Vienna and Budapest with three-engined Junkers aircraft in

conjunction with a number of other companies belonging to the Trans-Europe Union, which was at the time operating aircraft across Europe. It was not until 1925 that Oelag became an independent organisation, although no subsidy was received until 1927, when the Government gave the company its full support and a subsidy which



Austrian Air Lines. Main connections shown dotted.



enabled both expansion and improvement in the services. Aspern, the newly constructed aerodrome on the Danube near Vienna—used as headquarters by the company from the start—was enlarged and modernised by means of State funds, as were the aerodromes at Graz, Klagenfurt and Innsbruck, while three Austrian pilots were sent to be trained at the Deutsche Verkehrsfliegerschule, Berlin. A smaller subsidy is now paid than that which was voted in 1927—a year of relatively lavish Government expenditure—and this year the total will amount only to 1,200,000 Austrian shillings.

The company's head office is situated at Weihburggasse 9, Vienna, and the capital stands at 400,000 Austrian shillings. The following are the members of the Board of Administration:—Chairmanship vacant after the death of Dr. Friedrich Wagner-Jauregg. Directors: Ing. Hans Altmann, Dr. Leopold Lampl, Herr Alfred Hauser, Baron Victor von der Lippe zu Wintrup, Ing. Franz Pichler. General Manager: Councillor F. Deutelmöser. Managers: Herr von Goergey, Dr. von Hoffmann, Herr Richard Huebner; and the company has a staff of ten pilots, four mechanics and four wireless operators.

In 1925 three new services were added:—Vienna-Nurnberg-Furth; Nurnberg-St. Wolfgang (in Switzerland); and Vienna-Klagenfurt. Budapest and Graz were linked up in 1926, and a line from Vienna to Innsbruck opened. In 1927 new lines were opened from Vienna to Prague, Dresden, and Berlin; Venice, via Klagenfurt; and Constantine via Innsbruck. A line also connected the latter town with Klagenfurt.

From 1928 to the present year these services were continued with sundry modifications, including the introduction of Vienna-Berlin, Vienna-Venice express services, and extensions to Zurich, Belgrade, and Milan.

The services operated during 1932 were as follow:—Vienna-Prague-Dresden-Berlin; Budapest-Vienna-Berlin express; Vienna-Graz-Klagenfurt-Venice; Vienna-Venice express; Vienna-Salzburg-Innsbruck-Munich-Zurich; Klagenfurt-Graz-Vienna; Munich-Innsbruck-Bozen-Trento-Milan; Vienna-Graz-Zagreb-Belgrade; and Innsbruck-Salzburg.

### "Graf Zeppelin" Reaches Rio

THE German airship *Graf Zeppelin*, which left Friedrichshafen for Brazil on September 12, arrived at Pernambuco on September 15 and reached Rio de Janeiro on September 17. The airship started for Pernambuco on the return journey later the same day.

### East Greenland Expedition to Continue Work

WORK of the Pan-American East Greenland Expedition is continuing, despite the unfortunate death by drowning of Maj. H. G. Watkins, its leader. The work of the expedition will continue exactly as planned by Maj. Watkins in consultation with Pan-American officials. Mr. John Rymill, second in command, succeeds to the leadership of the expedition and will push the research into conditions affecting a proposed transatlantic air service, for which it was organised. Two bases have been established in Greenland about 70 miles apart, near Angmagssalik, just south of the Arctic Circle, where extensive meteorological and aerological studies will be conducted to determine the practicability of a northern transatlantic air route between America and Europe. Members of the expedition will also make extensive studies of the topography of East Greenland, from which large scale maps of the surrounding country and coastline will be made.

### Money Orders by Air Mail

THE Postmaster-General announces the introduction of a new service under which money orders may be sent by air mail to the Union of South Africa and South West Africa. The order will be handed to the remitter for despatch by air mail letter to the payee, and it is important that sufficient time, varying with the place at which the order is issued, should be allowed for the official confirmation of the remittance from the Money Order Department to be sent by the same air mail; information on this point may be obtained locally. In addition to the ordinary poundage, a fee of 11d., irrespective of the amount of the order, will be payable on each order.

### The "Monospar" at Portsmouth

THE behaviour of aircraft under the conditions imposed by regular commercial work is always a matter of great interest and few things show up the desirable and undesir-

Oelag's present fleet of machines consists of the following aircraft:—

Name	Registration Lettering	Type	Engines
<i>Oesterreich</i> ..	A-46	Junkers G. 31	Three Gnome and Rhone Jupiter
<i>Osiris</i> ..	A-28	Junkers G. 24	Three Junkers L. 5.
<i>Faunus</i> ..	A-100	Junkers G. 24	Three Junkers L. 5.
<i>Stieglitz</i> ..	A-2	Junkers F. 13	One Junkers L. 5.
<i>Halm</i> ..	A-22	Junkers F. 13	One Junkers L. 5.
<i>Neuntöter</i> ..	A-34	Junkers F. 13	One Junkers L. 5.
<i>Sonnenvogel</i> ..	A-48	Junkers F. 13	One Junkers L. 5.
<i>Dohle</i> ..	A-57	Junkers F. 13	One Junkers L. 5.
	A-61	Junker A. 20	Three Junkers L. 2.

As the aircraft are all supplied by the Junkers Company, and with the exception of the one G-31 type machine, the engines are also manufactured by the same German firm, it is not surprising that German influence predominates in the engineers' branch; in fact, the technical as well as the commercial collaboration between Oelag and the Deutsche Luft Hansa is without doubt the closest reciprocal support arrangement between two aviation companies that exists in Europe to-day. The results of such co-operation are obviously beneficial to the larger as well as to the smaller company.

Statistics covering the operation of the company since its inception are given below:—

Year.	Length of Airline in Kilometres	Kilometres Flown	No. of Flights	No. of Passengers	Freight and Baggage in Kilograms	Mail in Kilograms
1923 ..	593	108,776	336	743	2,570	1,320
1924 ..	593	275,051	951	1,976	4,662	2,335
1925 ..	1,480	257,086	839	2,426	20,385	4,639
1926 ..	992	23,316	77	201	1,160	702
1927 ..	2,150	389,964	1,949	4,274	55,835	1,699
1928 ..	3,533	643,000	2,810	5,477	97,337	6,910
1929 ..	3,738	678,498	3,428	6,400	111,981	6,411
1930 ..	4,000	727,753	3,253	7,869	191,853	17,731
1931 ..	3,955	662,973	3,020	9,192	211,814	17,618

Oelag uses Shell Aviation Spirit and, in accordance with German practice, benzol, and has now standardised on Aero-Shell lubricating oil for use in all power units.

able features more than does a period of extended work like the "Monospar" has been subjected to on the Ferry between Portsmouth and the Isle of Wight and the recent extension to Shoreham. In this case the undesirable features would appear to be non-existent, for everyone who has travelled in the machine is unanimous in acclaiming its exceptional comfort. Portsmouth, Southsea & Isle of Wight Aviation, Ltd., have only had the machine in service one month, but during that time it has carried over 1,000 passengers without any trouble whatsoever. The pilots all like it and say that it is both exceptionally easy to fly and to land, while the only criticisms we have heard is that it completely spoils one for any other aircraft. Recent tests at Croydon have shown that a very great decrease in cabin noise can be obtained by the use of four-bladed airscrews, so much so that with these in use there is very little more noise in the cabin than is experienced in an ordinary saloon car. The speed, too, has been increased by modifications to the airscrews, and an easy cruising speed of 114 is now obtainable.

### Canadian Air Mail Services

As previously stated in FLIGHT, the air mail services in Canada have been cut down considerably of late. During the period April 1 to June 30 of this year, however, mails were carried on the following services:—Amos-Siscoe; Moncton-Charlottetown; Montreal-Albany; Montreal-Rimouski; Narrow Lake-Sioux Lookout; Peace River-North Vermillion; Prince Albert-LaCrosse; Vancouver-Victoria; Winnipeg-Pembina; Fort McMurray-Aklavik. The service between Toronto and Detroit was suspended indefinitely on April 30.

### A.A. Wireless Broadcasts

THE Automobile Association announces that the 11.30 broadcast on 833 metres from the A.A. Radio Station at Heston Airport will in future be discontinued on the second Tuesday of each month owing to interference by the N.P.L. calibration signal, which is transmitted on 830 metres between 10.40 a.m. and 12 noon.

### An Aerodrome for Jersey

CONSIDERATION is being given to a scheme to build an aerodrome in Jersey, to give work to the unemployed.



# Airport News

## CROYDON

A SERIES of propeller tests have just been completed by Flt. Lt. H. M. Schofield in the "Monospar" fitted with specially designed four-bladed propellers. Flt. Lt. Schofield reports that the performance is not quite up to the two-bladed propeller standard, there being a slight difference in speed, but the outstanding improvement is made in the silencing. "There is not so much noise in the cabin as there is in a saloon car," he stated.

As a result of keen and promising inquiries from the Continent and the Colonies, General Aircraft, Ltd., are planning a demonstration tour to start shortly for Holland, France, Germany, Italy and Switzerland. In many cases the demonstrations have been specially requested.

Prince Bibesco flew in the "Monospar" at Hanworth on Monday and handled the machine himself. The Prince expressed his enthusiasm and complimented the designer.

The murky weather on Tuesday caused several of the inward air liners to land at various aerodromes, some making for Littlestone, Lympne and Penshurst.

Quite a number of jockeys have made use of the air services to reach various race meetings. Mr. Gordon Olley flew a party of four in a specially chartered aeroplane to Ayr. Mr. Gordon Richards, who arrived from Paris on Tuesday, gave several people a lucky tip. They are hoping that Mr. Richards will travel by air more frequently.

A gentleman who was seriously ill was conveyed on a stretcher by air from Munich. Accompanied by his wife and a hospital orderly, he chartered a special aeroplane and left Munich at 10 a.m. for Amsterdam, where they transferred to the Junkers G.38 air liner the D.2500, arriving at Croydon at 6 p.m.

Mr. Rickard has been appointed an examiner for "A" licence pilots by the Royal Aero Club. He commenced his new duties on Saturday when he visited Ford Aerodrome to examine three pupils.

Mr. "Timber" Woods, of Surrey Flying Services, Ltd., had a narrow escape from what might have been a serious accident. Mr. Woods was taxiing out by the edge of the obstruction markers in an Avro, with some pleasure flight passengers, when an Air Union machine made a fast landing and looked like overshooting the landing area, heading straight for the Avro. Mr. Woods had no means of escape, he just switched his engine off and hoped for the best, and in this case his hopes were fulfilled. The *Golden Ray* pulled up with the nose of fuselage touching the wing of the Avro! Fortunately, no damage was done.

It is some consolation to know that the unfortunate catastrophe of Saturday morning, when M. Gustave Demeuldre lost his life in the crash at Selsdon, may have the effect of making commercial aviation safer, as it is possible that the officer on duty in the Control Tower

may in future be vested with the power to order a pilot to turn back in such circumstances. This would help to lighten the burden of responsibilities that rest on an air liner pilot. It is regrettable that M. Gustave Demeuldre did not accept the advice of the Duty Officer and turn back—he took a chance and lost. Had he got through he would have been acclaimed a stout fellow and a fine pilot, which he undoubtedly was, but his luck did not last out the other few minutes that would have meant his arrival at Croydon. Let us hope that the mechanic will have a speedy recovery.

The first "Spartan", fitted with the new Hermes IV 130-h.p. engine to be sold to a private owner was ready for delivery to Mr. H. R. Westhead on Saturday. During the week the Cirrus-Hermes Engineering Co. despatched a large consignment of new Hermes engines to Cowes, and their workshops are now busily engaged in executing a large order for a foreign power. This company now undertakes repair work, and a "Moth" aeroplane owned by the Kent Aircraft Services, which was damaged in a crash, has been completely repaired and rebuilt, and was tested by Mr. Holman. It looked like a new machine when it was handed over to the owners. One of the latest Hermes engines fitted with a self-starter is in the course of production. It is to be installed in a new type of French light cabin aeroplane, and will be flown on an extensive tour abroad by M. Rene Fonck.

Adverse weather conditions caused four of the Continental air services to be cancelled on Sunday. They were the Imperial Airways 6 p.m. services to and from Paris, and the Sabena 3.40 p.m. from Brussels and the 5.10 p.m. from Croydon. All other services ran to schedule.

Croydon may soon have the pleasure of welcoming once more a popular friend in the form of Mr. Frank Hawkes, who, on his last visit to Europe, earned the reputation of being a human bullet. Mr. Hawks has had a new machine built embodying all the latest modifications and with a top speed somewhat over 250 miles per hour (described in *FLIGHT* for July 8 last). He is to attempt some more high-speed records. The actual date on which he will sail for England is not yet known.

Total number of passengers for the week, 1,998; freight, 67 tons 9 cwt.

HORATIUS.

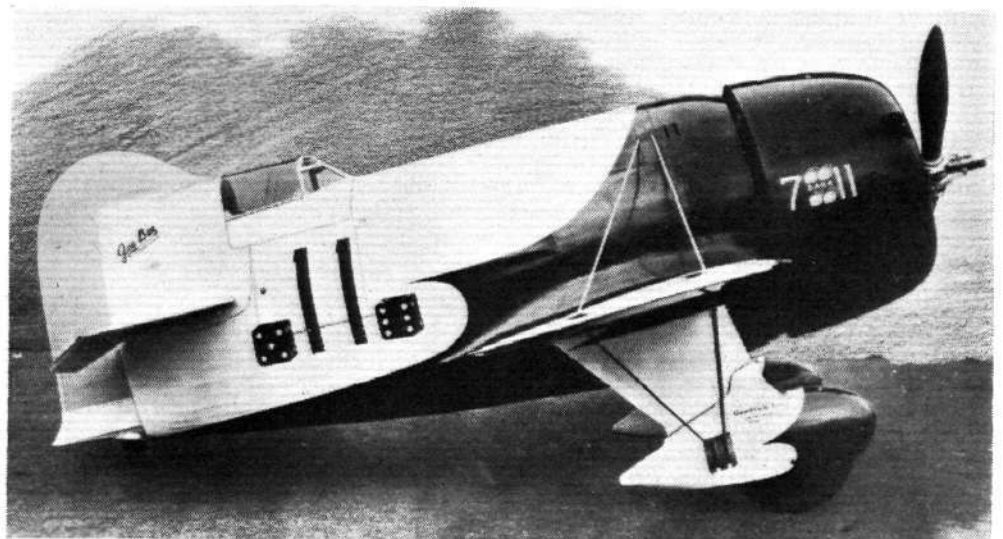
### Charles Atkins & Nisbit, Ltd., and Air Taxis, Ltd.

We are asked by Charles Atkins & Nisbit, Ltd., to state that the report published in Croydon Notes last week that they have closed down their business at the airport is entirely incorrect. They are still continuing the work they have carried on there during the past four years and still act as agents for Air Taxis, Ltd.



### FARTHER BACK THAN EVER:

If the pilot's cockpit of the Granville Brothers' Gee Bee Super Sportster is moved any farther back in the next model the pilot will have to hang on to the trailing edge of the rudder and become a streamer. The machine, fitted with a supercharged Wasp engine, is credited with a speed of more than 300 m.p.h., piloted by Maj. J. Doolittle. The view from the cockpit is probably better than one would expect.



# Airisms from the Four Winds

## The Prince's Visit to Denmark

THE PRINCE OF WALES, who flew from France to Windsor Park on September 14, piloted by Mr. E. H. Fielden, will open the Anglo-Danish Trade Exhibition at Copenhagen on September 24. It was arranged that the Prince should fly to Copenhagen on September 22 in the new Imperial Airways Armstrong-Whitworth *Atalanta* airliner—its first long-distance passenger-carrying journey.

## "American Nurse" Missing

SINCE having been sighted over the Atlantic on September 13 nothing more has been seen or heard of the Bellanca monoplane *American Nurse*, in which Mr. W. Ulbrich, Miss Edna Newcomer and Dr. Leon Pisculli set out from New York to fly non-stop to Rome. Reports that it had been seen over Sardinia proved to be incorrect, but orders have been given for a search to be made among the central Italian mountain ranges in case the flyers had come down in that region.

## "Flying Family" leave for Scotland

MR. HUTCHINSON, his wife and two children, and the crew of the Sikorsky amphibian, which was wrecked in Greenland during their Atlantic flight, left Angmagssalik on September 15 in the British trawler *Lord Talbot* for Scotland.

## An Australian Flight Ended

MR. RICHARD ALLEN, of the Australian Air Force, who left Heston on August 3 on a leisurely holiday flight to Australia from England, arrived at Wyndham in his "Moth" on September 19.

## The London-Cape Flight

IN connection with Capt. R. H. McIntosh's projected attempt to fly from London to Cape Town in three days, we learn that Sqd. Ldr. Bert Hinkler has expressed his willingness to accompany Capt. McIntosh, provided the arrangements and organisation of the flight can be agreed upon. "Bert" and McIntosh have flown together before, and have proved a good team, so that if they can work together on the London-Cape attempt the human factor of success should be provided.

## Off to Kenya

MRS. MARKHAM, who crashed her Avro "Avian" in Germany on August 12, is hoping to have the necessary repairs effected soon and to start for Kenya on about September 30. She has entrusted the Vacuum Oil Co. with the arrangements for her lubricating oil supplies.

## Returned to Africa

MR. OSCAR GARDEN, who, it may be remembered, made a forced landing at Abercorn earlier in the year when attempting to create a new record for a flight from Cape Town to England, has returned to Africa after having spent several months in England in connection with his old company, "Skywork, Ltd." Mr. Garden's destination is Dar-es-Salaam, where he intends to reassemble his Hermes-engined "Spartan" with new wings which he is taking with him, and thereafter to carry out joyriding in Kenya.

## An Australian Altitude Record

A SUPERMARINE "Seagull" amphibian of the R.A.A.F., attached to the Australian warship *Albatross*, has obtained an altitude of 23,000 ft.

## World's Record for France

ON September 16 Monsieur Lemoine, test pilot to Henry Potez, established a new world's speed record over 500 km. (310 miles) with a useful load of 1,000 kg. (2,200 lb.) by covering the 500-km. course at an average speed of 294.194 km./h. (182.8 m.p.h.). M. Lemoine took off at 11.38 a.m. and completed the course at 1.17 p.m. The flight was made over the Villacoublay-Angers course, and the machine used was a Potez 50.A.2 fitted with Gnome-Rhone 14 K.brs engine.

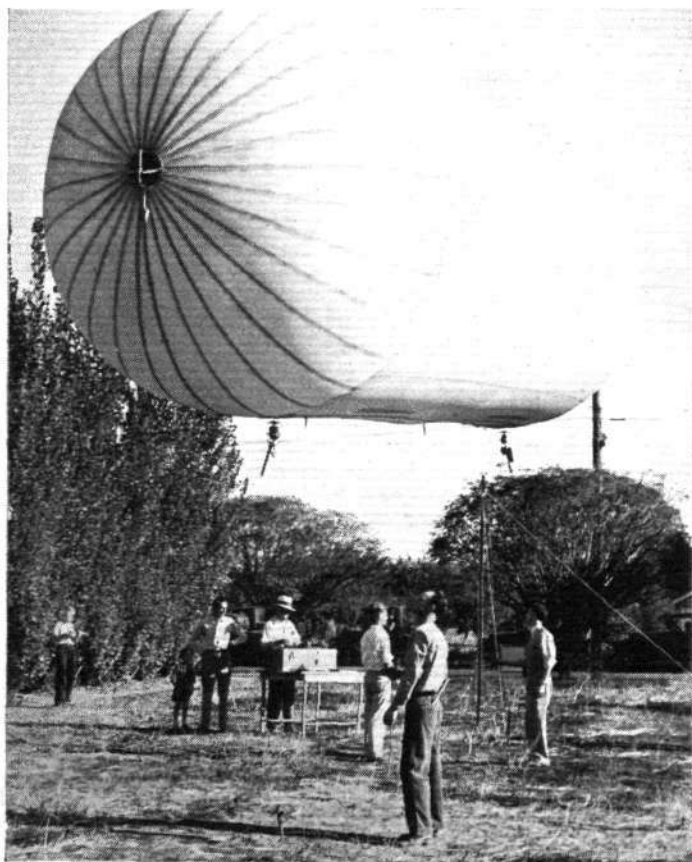
## A Welcome Trend

FOR long we have held that in order to get the general public interested in the large and expensive aircraft at present offered for them to fly in, they must be given "stepping stones" in the shape of small, cheap and easy-to-fly machines, much in the same way as is done in the motor-car trade. Purchasers of baby cars soon get tired of the limitations of their little vehicles, and by hook or by crook they manage to afford something better; something of a price which they would never have considered getting had they not been egged on by the desire engendered in them in the first place by the small vehicle. In

a similar way manufacturers will have to provide light and cheap aircraft which will, admittedly, not be suitable to fly either long distances or in bad weather, but which will whet the appetite of the public for the "next step." A sign that this is being recognised is the number of people who are turning to the production of very light aeroplanes. There are at least four different interests building machines far lighter than anything now flying, and several well-known persons are interesting themselves in the subject. Both Col. the Master of Sempill and Mr. Gordon England, for example, recently flew one of these aeroplanes with an engine of less than 10 rated h.p. This is, we know, the first power-driven aircraft Mr. England has flown since 1917, and yet he found not the slightest difficulty in handling it, and is fully convinced that the production of aeroplanes like this will lead to a great influx of people who now hold back because they feel that existing machines are too large, costly, and frightening. Most of these new designs appear to be of the pusher type—another commendable feature which has much to recommend it.

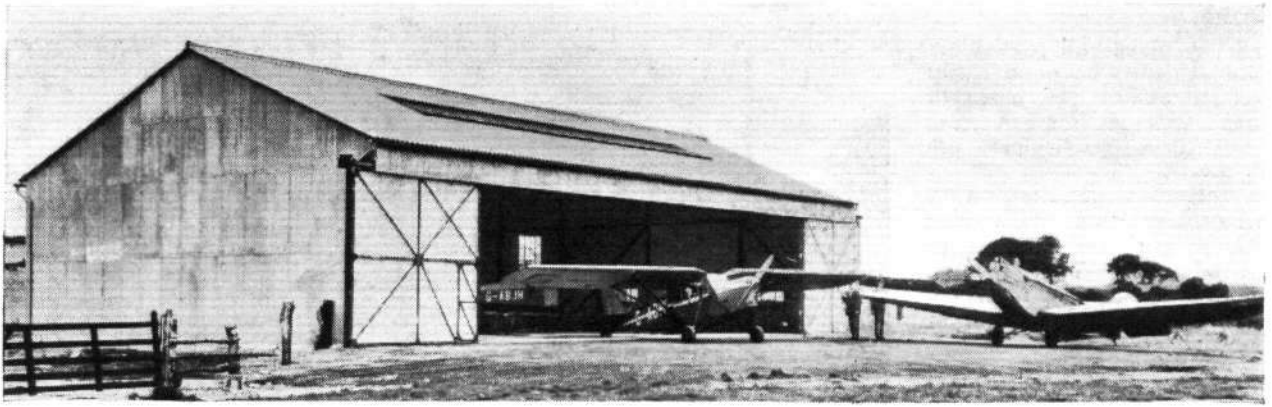
## The Dutch Polar Year

OPERATIONS with the Dutch Polar Year formally began on September 7 with a ceremony attended by the chief officials. Dr. Cannegieter, the President of the Dutch Polar Committee, explaining the plans for the work, said two daily flights up to an altitude of 6,000 metres (nearly 20,000 ft.) were to be made for meteorological purposes, as well as a special flight for more specific observation. The Prime Minister, M. Asgerisson, also spoke. Dr. Cannegieter will leave shortly, and after his departure Flt. Lt. van Giessen will conduct observations in co-operation with Director Thorkelsson, of the Icelandic Meteorological Office.



**SOMETHING NEW IN AIRSHIPS:** A model of a new type of airship built by Thad Rose at Van Nuys, California, which has been tested recently. Details are at present lacking, but it is a semi-rigid, 33 ft. long and 9 ft. diameter, weighing about 100 lb., with interior construction of steel wires and bracing. Tests disclosed that the model, powered with two 1.36-h.p. motors, went through a series of difficult manoeuvres and was brought to earth again with its own power without the aid of ground crew operations. Another feature of this airship is the circular "tunnel" extending through the centre from nose to tail, which, it is claimed, "reduces wind resistance."





**AT SHANKLIN :** The 70 ft. by 40 ft. by 12 ft. hangar built for Portsmouth, Southsea & Isle of Wight Aviation, Ltd. A clear opening of 50 ft. is provided by the doors.

## Housing Aeroplanes

**A**EROPLANES spend by far the greater part of their life on the ground, and therefore, wherever they are operated there arises the necessity for hangar accommodation both to provide convenient facilities for overhauls and also to avoid deterioration of both airframe and engine by protection from the elements.

The firm of Boulton & Paul, of Norwich, well known not only as aircraft manufacturers but also as constructional engineers, specialise in the design and construction of steel hangars of all types suitable for housing either the light aeroplane of the private owner or the fleet of machines of the flying school or operating company. Being also the only firm engaged in the manufacture of aircraft who possess a building and constructional engineering department, they are specially competent to deal with all questions appertaining to the housing of aircraft.

Our illustrations depict hangars recently erected by this firm for Portsmouth, Southsea & Isle of Wight Aviation, Ltd., at Shanklin, in the Isle of Wight; for Hillman's Airways at Romford and for Air Service Training, Ltd., at Hamble. The hangar at Shanklin is 70 ft. by 40 ft. by 12 ft., with steel doors arranged to give a clear opening of 50 ft. That at Romford is 90 ft. by 30 ft. by 15 ft., with doors arranged to give an opening for the full length of the building on one side, and that at Hamble is 300 ft. by 70 ft. by 18 ft., with steel-framed doors 18 ft. high by 12 ft. 6 in. wide running on Henderson track along all one side of the building. All these hangars typify Boulton & Paul design, which ensures the provision of hangars of sturdy construction at low prices, with good accommodation and excellent lasting qualities.

In addition to the above, Boulton & Paul have supplied hangars to the Air Ministry, on the Imperial Airways air route to South Africa at Bulawayo and the Rand Airport, Germiston, and to various private owners. Some of the many advantages of steel construction for hangars and aerodrome buildings may be summarised as follows:—

1. Steel work provides a fireproof structure, and it is durable.
2. It is specially suited to adaptation and expansion, and can even be moved bodily from one position to another.
3. It permits radical alteration in internal planning with a minimum of expenditure. This applies to administration buildings as well as hangars.
4. Partitions can be erected which are easily removable and require a minimum of internal supports.
5. With steel construction it is possible to obtain the largest span with the least height, thus providing the minimum of obstruction to incoming and outgoing aircraft.
6. For the roofs and side coverings there is a choice of several kinds of material, for example, galvanised corrugated sheets, asbestos corrugated sheets, corrugated "Cellactite" sheeting and Robertson's metal sheeting.

A typical specification of a Boulton & Paul hangar provides for all the steel framework in the stanchions, roof trusses, purlins, rails, and wind bracing where considered necessary. For the roofing, 22-gauge galvanised corrugated sheeting is a favourite covering, and for the walls

similar sheeting, but of 24 gauge, is used. The doors vary according to the size and number of aircraft to be housed, and are of steel-framed design, covered with galvanised corrugated sheeting run on a top track with guides and guide rail at the bottom. With very high doors it is sometimes better for them to run on a bottom rail track with top guides.

Lighting can be obtained by means of patent glazing or tee-bar putty glazing placed in the roof, or alternatively in the sides. When a building is erected in a tropical country, windows are often placed in the sides only in order to avoid the glare of light through roof glazing.

Galvanised gutters and downpipes of suitable section are always provided. All steelwork, other than galvanised material, is given one coat of paint before despatch. All bolts and nuts are sent for fixing, and in the event of customer preferring to undertake the erection himself (which is not considered advisable), Boulton & Paul supply full



**AN AMPLE INTERIOR :** Air Service Training at Hamble like plenty of room for their machines, and they get it in this B. & P. hangar, which is 300 ft. long and 70 ft. wide.



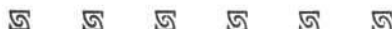
detailed key plans and particulars to enable this to be done easily and economically. In cases of buildings destined for overseas markets, these particulars are always given.

The activities of Boulton & Paul's constructional engineering department are not confined to aircraft hangars. They secured the important contract from the Air Ministry for the erection at Farnborough of the new full-scale wind tunnel, on which work is now proceeding. A particularly high degree of accuracy is necessary in the construction, but with their experience of working to limits of a few thousandths of an inch in the long girders of the airship R.101, Boulton & Paul are not likely to be daunted by this task. Quite apart, however, from aviation, Boulton & Paul have designed and erected factories, workshops, transmission towers, garages, grandstands, plants of every description at copper mines, paper mills, etc., and, in fact, steel-framed structures for every conceivable purpose. The



**AN ESSEX VENTURE :** Hillmans Airways run regularly from Maylands Aerodrome, Romford, to Clacton. At Romford they house their machines in this hangar. (Flight Photo.)

aircraft industry, and all those connected with aviation, should address their inquiries to Boulton & Paul, Ltd., Norwich. (London Office—139, Queen Victoria St., E.C.4.)



#### Royal Aeronautical Society Lecture Programme

THE following is a list of the lectures as at present arranged for the first half of the 1932-33 Lecture Programme. Lectures will be held in the theatre of the Royal Society of Arts, 18, John Street, Adelphi, W.C.2, at 6.30 p.m.

Advance proofs of the lectures will be available, price 6d. each, or 4s. for the half session, a few days before each lecture is delivered.

October 6. "Air Navigation." Captain N. MacMillan, M.C., A.F.C., A.F.R.Ae.S.

October 20. "Flying Conditions on the West Coast of Africa." Flight-Lieut. W. G. Pudney.

October 27. "Aeroplane Covers and Wheels." (Joint Meeting with Inst. of Rubber Industry.) Mr. F. Fellowes.

November 3. "Civil Primary Training." Mr. H. G. Travers, D.S.C.

November 10. "Airscrew Design." Mr. D. L. Hollis Williams, B.Sc., A.F.R.Ae.S.

November 24. "The Evolution of Aircraft Wireless Equipment." Squadron-Leader H. Leedham, O.B.E., R.A.F.

December 1. "The Behaviour of Fluids in Turbulent Motions." Mr. A. Page, A.R.C.Sc., F.R.Ae.S.

December 8. "Air Survey." Lieut. J. S. A. Salt, R.E.

December 15. "Lessons of the D.O.X." Dr. C. Dornier.

Visitors are admitted to any lecture on signing the Visitors' Book with their full name and address.

#### G.A.P.A.N. 2nd Class Navigators' Classes

THE classes for the 2nd Class Navigators' Licences by the Guild of Air Pilots and Air Navigators for the benefit of those who desire to sit for the examination in March next, will commence on Tuesday, November 8, 1932. The syllabus will be published in an early issue of FLIGHT. The fee for the course will be 5 guineas, and books, charts and equipment will be supplied. The lectures will take place on two evenings a week from 6 p.m. to 7.30 p.m., and it is hoped that by kind permission of the Air Ministry the classes will again be held at Gwydyr House. The complete course will comprise about 34 lectures. Provided sufficient support is forthcoming, a course for 1st Class Navigation Licences will also be held, the fees for which will be 8 guineas. Applicants desirous of attending the lectures for either course are requested to make early application to Capt. A. G. Lamplugh, c/o The Guild of Air Pilots and Air Navigators, 61, Cheapside, E.C.2, and to mark envelopes "Navigation." It is also requested that cheques made payable to "Capt. Lamplugh, Navigation A/c 1932" should be forwarded with the applications. The 2nd Class course will be limited to 30 members.

#### Busk Studentship in Aeronautics

THE Trustees of this studentship, founded in memory of Edward Teshmaker Busk, who lost his life in 1914 whilst flying an experimental aeroplane, have awarded the studentship for the year 1932-33 to Mr. Herbert Brian Squire, of Balliol College, Oxford.

#### Farnham Crash Inquest

THE inquest on the three victims of the crash of a "Puss Moth" at Farnham on July 27 was concluded on September 14, when the jury returned a verdict of "Death by Misadventure." The three victims were Mrs. A. C. Bossom, aged 43, her son, Mr. Bruce Bossom, and Count Otho Erbach-Furstenau, aged 23, of Hanover. Maj. Cooper, Air Ministry inspector of accidents, in his evidence, said minute examination of the wreckage at Farnborough had failed to determine the cause of the accident, and had revealed no evidence of faulty material or workmanship. Maj. Cooper proceeded:—

"From the condition of the wing parts it seems certain that the main planes of the aircraft failed downwards under an extremely heavy load—certainly more than four times the weight of the aircraft. They appeared to have failed downwards at the same moment and in exactly the same way. In my opinion that evidence is definite. In my view the only explanation for this excessive down load on the machine would be either a very complete failure of the tail plane or failure of the body or fuselage of the machine. I am satisfied that the tail plane did not fail in the air. The only conclusion I have been able to come to, which is purely a speculative deduction, is that the fuselage was the part of the machine which failed in the air. This failure I attribute to slight damage or slight crippling of the fuselage or some member of the fuselage as the result of an abnormally heavy landing at some time."

#### Canadian Government Air Operations

DURING the period April 1-June 30 of this year the Canadian Government accomplished the following air operations:—*Vancouver*: Fire preventive and miscellaneous, 159½ hr.; *Photographic* in British Columbia, 128 hr. *Winnipeg*: Forestry patrols, etc., Manitoba, Saskatchewan and N.W. Territory, 229 hr. *Ottawa*: Fire preventive in maritime province, transport and mail, 1,020 hr.

#### No. 57 (Bomber) Squadron

NO. 57 (BOMBER) SQUADRON will move from Netheravon to Upper Heyford, with effect from September 5, 1932.

#### The Last of Collinstown

BUILT during the Great War at a cost of £250,000, Collinstown Aerodrome, County Dublin, has frequently been in the news as a possible airport for the City of Dublin. Time and time again plans for the establishment of the airport have fallen through. Now the hangars have done likewise, and all that remains of a once well-equipped aerodrome is a heap of bricks and broken beams. Five hangars were to have been built, but four only were completed during the occupation of the aerodrome by the R.F.C. When taken over by the Free State Army Air Corps, after the signing of the Anglo-Irish Treaty in 1921, it was abandoned, and the headquarters of the new corps established at Baldonnel. Last year an estimate was prepared to show the cost of putting the hangars in repair and making the site suitable for a civil airport; the total of this estimate was £20,000.

# The Industry

## R.A.E. AUTOMATIC OBSERVER Mk. I

THE Automatic Observer has been designed for use in aircraft to produce a cinematograph record of the simultaneous readings of instruments employed for performance tests of aircraft. This condition cannot obtain when the readings of individual instruments are taken by an observer.

Full-scale research work on spinning also requires simultaneous readings, for the reaction upon a pilot during a spin renders it difficult for him to concentrate on the accurate reading of instruments and give close attention to the controls.

The fact, too, that all readings on the Automatic Observer are taken simultaneously and automatically, also allows the pilot to concentrate more on navigation, with an increase in the steadiness of airspeed and altitude.

Maintenance with this instrument is simplified by the use, as far as possible, of standard instrument parts, and all units can be quickly replaced.

The apparatus consists of a metal instrument box containing the following units:—Revolution Indicator, calibrated 600-3,600 r.p.m. Airspeed Indicator, calibrated 50-250 k.p.h. Altimeter, calibrated 0/4,000 m. Watch. Two Cross Levels. Thermometer (used only to correct readings of instruments affected by changes of temperature).

A spare airspeed indicator, calibrated 60-400 k.p.h., and an altimeter calibrated 0/11,000 m., are supplied, and are interchangeable with the instruments fitted.

Instruments calibrated in British units are supplied as required.

The units are, in most cases, specially designed for the purpose, and are arranged so that the various dials and scales are in a plane, and are photographed through a glass front by means of a cinematograph camera securely supported above the instrument box.

An automatic motor-driven timing switch, controls the trigger of the camera through a solenoid, which takes its electrical supply from a 12-volt battery, which it is assumed is available.

The glass front, airspeed indicator and revolution indicator unions, as well as the caps for the four illuminating bulbs and the watch winding stem, are provided with rubber joints so that the whole instrument box acts as the static chamber for the airspeed indicator and altimeter.

All electrical connections are made by means of plugs and sockets, which cannot be reversed.

A small heating grid is built into the tunnel to prevent any condensation on the glasses which would obscure the instrument dials.

The camera is a standard commercial, spring-driven cinematograph type, fitted with a special 25 mm. focal length F. 2.8 lens. The film spools carry 30.5 m. of standard

35 mm. wide cinematograph film, and the spring drive operates 15.25 m. of the film at one winding at a constant speed of 16 pictures per sec. when run freely. An indicator is provided on one side of the camera case, which indicates at any given time the length of film which has been used. The driving spring of the camera is controlled by the trigger.

An interrupter switch controls the illuminating lamps and the solenoid, which in turn operates the camera release trigger and is designed to give a contact of short duration, approximately every 5, 10, 15 and 30 sec., with a setting index. Each contact energises the solenoid for a sufficient length of time to obtain a burst of three or four exposures of the film, one or more of which is properly exposed, depending upon the length of contact and the position of the camera shutter. So long as the interrupter switch is running, the pilot or observer is relieved of any further action in connection with the Automatic Observer. For ease of ranging and initial calibration, the airspeed indicator, revolution indicator and altimeter scales are divided into 200 units. These scales of readable to 0.5 of a division, which corresponds approximately to 15 m., 1 k.p.h. and 10 r.p.m., while the watch scale may be read to 1/5 of a division, which corresponds to 1/5 of a sec. The cross-level scale is approximately 1 deg. per division, and this is easily read to 1/5 of a deg.

Overall dimensions:—210 × 190 × 545 mm.

For transit purposes the apparatus is packed in a felt-padded partitioned box. This box is provided with hooks, and is suspended by shock-absorber cord in an outer packing case, measuring 785 × 585 × 480 mm.

Gross weight (including camera and spare instruments), 49 kg.

Smith's Aircraft Instruments, 185, Great Portland Street, W.1, have the sole selling rights of the Automatic Observer.

## THE MONEY FLARE

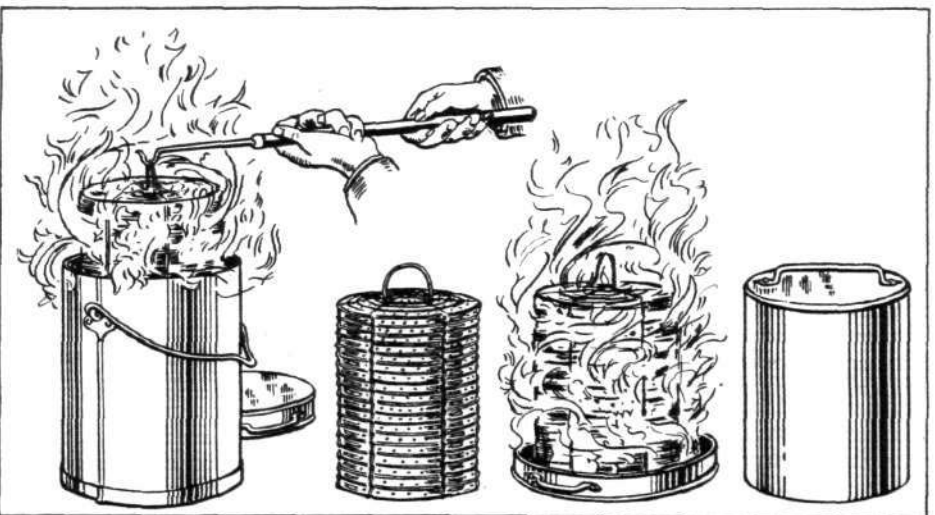
AS a device for obtaining illumination during night flying operations the Money Flare has been in use since 1916. The sketches which accompany this description readily explain the operation entailed in using it. The apparatus consists simply of the flare, which has a handle attached for lifting it with a long hook, a pail to contain paraffin, and an extinguishing cover.

The two centre sketches show the flare in flaming activity with the lid of the paraffin pail acting as a handy tray, and also in inactive state on the left the flare is being returned to the paraffin pail, which will extinguish it and re-charge it with fuel simultaneously. The fourth sketch is the extinguisher cover, which will extinguish the flare instantly. When saturated with fuel, the flare absorbs about 1½ gallons. It is ignited with a naked flame and burns for half-an-hour with a maximum flame and then slowly diminishes for another hour. Although the flare which has absorbed 1½ gallons will not burn right out under that length of time, it is the practise to re-fuel it at regular intervals of between 45 and 60 minutes to maintain an average brilliance of illumination. Although the Money Flare provides a naked flame, it can be moved about the aerodrome to meet a change of wind without the necessity of taking the precaution of extinguishing it, the long hook being the suitable instrument for the purpose.

An advantage of the naked flame is that it is usually more easily seen in the air than any other kind of light, and it also serves the useful purpose of indicating the direction of the wind. Money Flares are manufactured by Money's Patents, Ltd., 111, Dalston Lane, E.8 (telephone Clissold 1456).

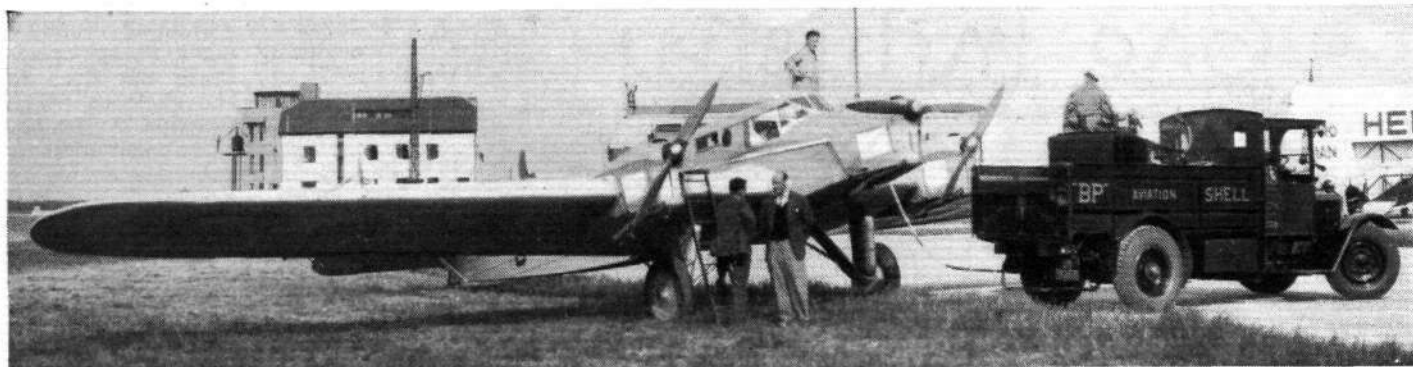
## S. & M. TYCOS ALTIGRAPH

FROM Short & Mason, Ltd., comes an announcement of their S. & M. Tyco's Altigraph Portable Model, designed to meet the needs of the civil aviator, professional or amateur. Not only altitude is recorded by this convenient instrument, but time and the duration of flight, too, and to make the record of a flying performance as complete as possible there is provision



The two centre sketches show the Money Flare inactive and active. On the right is the extinguisher-cover, and on the left the flaming flare is being immersed in the paraffin pail for re-charging.





Refuelling Capt. N. Stack's Spartan Mailplane from the Shell and "B.P." lorry at Heston prior to his flight to India and back.

for noting down other interesting details, such as the weather experienced.

The specification of the S. & M. Tycos Altigraph is as follows:—Revolving drum clock with a start and stop device, performing one revolution in six hours, and a reliable recording movement giving a range of 0/8,000 ft. in 200 ft. divisions on the chart (the metric equivalents being supplied when necessary). The charts are printed on a special paper, and the recording pen is filled with a special ink. A very light and compact case houses the Altigraph, with corner attachments at the top and bottom for suspension purposes if desired. Approximate measurements are  $7\frac{3}{4}$  in.  $\times$   $4\frac{1}{2}$  in.  $\times$  4 in., and weight 2 lb.

Inquiries should be addressed to Short & Mason, Ltd., Aneroid Works, Walthamstow, London, E.17.

#### TRAINING AT GATWICK

THE Redwing School of Flying, which operates at Gatwick Aerodrome, Lowfield Heath, Surrey, sets out full details of the courses they have organised for training pilots and engineers in a pamphlet just received. The main students' course is arranged to extend over two years, but there is an alternative and comprehensive one-year course when the longer period is not within the student's means.

#### WELDING

THE August issue of *The Welder*, published by Murex Welding Processes, Ltd., contains part III of the article on the Spanweld system, an article on the finish of welded plant, and many other features of informative value to those interested in the practice of welding. This magazine will be sent each month free of charge on application to *The Welder*, Ferry Lane Works, Forest Road, E.17.

#### STEEL v. RUBBER SPRINGS

THE results of long investigation into the relative merits under varying conditions of steel springs and rubber springs are published in a booklet produced by the Coil Spring Makers' Association, Williams Deacon's Bank Chambers, Church Street, Sheffield, to whom all correspondence should be addressed. This investigation, which was instituted by that Association, is of primary interest to railway and transport engi-

neers, as the results bear especially upon buffing and drawgear. One conclusion arrived at in favour of the rubber spring that will have an interest for the aircraft constructor is its advantage in the weight factor. Rubber requires about 2.9 lb. per inch-ton of capacity, as against 4.2 lb. for the steel coil spring, which, in other words, means that the steel spring for a given capacity weighs about 45 per cent. more than the rubber, but the cost of the steel spring is only about half that of the rubber. This result published in favour of the rubber spring as regards weight is one example of the impartiality of the investigators in their comparative tests.

#### RAPID REFUELLING

OUR illustration shows the refuelling from the Shell-Mex & B.P. lorry of the Spartan Mailplane prior to Capt. N. Stack's flight to India, and serves to remind us of the patient and untiring industry of those who serve these fuel lorries to maintain the supply for aircraft in all parts of the country.

The recent itinerary of this lorry included some active work in connection with the Week-end Aérien. After serving our foreign visitors on their arrival at Heston, it left at once on an all-night journey to Bristol, arriving in time for the landing of the visitors on Friday morning. It returned again to Heston and was ready to meet the demands when the aircraft flew back on the Saturday. That night it left for Lympne to cover the general departure for the Continent. Altogether Shell-Mex & B.P., Ltd., supplied 25 of the visiting machines with spirit, and in addition it attended to the requirements of 17 marshals. Aero Shell oil was also used by 14 visitors. The lorry was in attendance at the Nethercourt Aerodrome at Ramsgate last Sunday, and seldom does any important flying meeting take place at which this "rapid refueller" is not to be seen.

#### TRIBUTE TO THE TIGER MOTH

FLT. LT. TURNER-HUGHES has done 320 hours of flying in the "Tiger Moth" since April 12 at National Aviation Day Displays all over the country, Sir Alan Cobham informs the de Havilland Co. He carries out four items in the programme twice daily. This involves four displays of inverted flying daily

at a different town each day, and over 126 towns have now been visited.

At each performance the machine is subjected to many severe forms of aerobatics, such as inverted loops, bunts, upward spins, flick rolls and flick loops. So far, the "Tiger Moth" has never once been out of action through mechanical failure or trouble of any description. The machine enables Flt. Lt. Turner-Hughes to put up some of the most masterly exhibitions of aerobatics seen.

#### CAPT. STOCKEN'S NEW ADDRESS

CAPT. R. H. STOCKEN informs us that his work during the past year or so has justified him transferring his office to Dorland House, 18-20, Regent Street, London, W.1 (Phone Whitehall 8845). Capt. Stocken has done a great deal of engine flight test work, advanced dual instruction, seaplane instruction, and similar work, and is prepared to purchase aircraft on behalf of private owners, and undertake liaison work for firms of the aircraft industry at home and abroad. He also speaks French fluently.

#### SHERARDIZING

A LITTLE book on the history, operation and application of the process of rust-proofing, known as Sherardizing, has been written by Mr. G. Petrie and Mr. J. C. Mills, and published by Whitehead Brothers (Wolverhampton), Ltd., price 2s., post free. This process employs zinc dust as the medium for rust-proofing, applied by heat-treatment, the zinc dust being the product of zinc distillation.

Details of an Air Ministry test are quoted in the book. Sea-water spray tests were made on treated samples of steel strip, a universal joint and bolt and nut, the thickness of the Sherardized coating being 0.0002 in. These samples were exposed in a weathering shed for eight months and sprayed with sea water three times per day for the whole period.

At the end all the samples were coated with a whitish corrosion product and showed small amounts of rust. On the whole, corrosion did not appear to be serious, but protection over a longer period would have been expected with a heavier coating of the same quality. The address of the publishers is 32, King Street, Wolverhampton.



# THE ROYAL AIR FORCE

London Gazette, September 16, 1932

## General Duties Branch

The follg. are granted permanent commissions as Pilot Officers with effect from Aug. 29 and with seny. of Aug. 29, 1931 :—A. H. Fear, G. C. Tomlinson.

The follg. are granted short-service commissions as Acting Pilot Officers on probation with effect from and with seny. of Sept. 2 :—P. B. H. Butler, W. G. Devas, W. B. Fleming, D. W. H. Gardner, W. H. Gerrard, E. P. P. Gibbs, G. J. Grindell, H. V. Kennedy, P. C. Lawrence, J. S. Leslie, J. S. McLean, J. C. Mole, G. A. M. Pryde, D. S. Radford, O. W. W. Reed, J. R. L. Rumsey, P. H. P. Simonds, E. L. A. Walter, C. H. T. Warner.

The follg. Pilot Officers on probation are confirmed in rank (Sept. 11) :—G. A. Bartlett, W. E. Cameron, M. H. Dwyer, D. Y. Feeny, J. Grandy, J. H. Heyworth, P. A. Hunter, A. A. Saw, W. L. Stewart, R. B. Young, J. F. L. Zorn.

The follg. Pilot Officers are promoted to the rank of Flying Officer :—A. H. Seymour-Lucas (with seny. of Sept. 26, 1931) (March 26); H. T. Bennett (June 20); W. Pickersgill, H. L. Tancred, E. W. Whitley (July 5); H. Harkness (Aug. 29).

Wing Commander G. W. Robarts, M.C., is restored to full pay from half pay (Sept. 1); Flying Officer F. H. H. Twelvtree is placed on the retired list at his own request (Sept. 8).

The follg. Flying Officers are transferred to the Reserve (Sept. 19).—Class A.—N. F. V. Henkel. Class C.—M. Harrison.

## Medical Branch

J. F. Ziegler, M.B., B.S., is granted a short-service commission in the rank of Flying Officer for three years on the active list, with effect from July 5, and with seny. of July 5, 1931.

The follg. have been granted short-service commissions as Flying Officers

for three years on the active list, with effect from Aug. 5, and with seny. of the dates stated :—R. K. Muir, M.D., C.M., L.M.S. (Aug. 5, 1931); F. H. Peterson, M.D., M.C.P. and S. (Aug. 5).

G. A. M. Knight, M.B., B.S., is granted a short-service commission in the rank of Flying Officer for three years on the active list, with effect from Aug. 22, and with seny. of Aug. 27, 1931.

## Chaplains Branch

The Rev. J. Lavin is granted a permanent commission (Sept. 14).

## ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

Pilot Officer G. W. Bennett is granted a commission in Class A in his present rank, on resigning his commission in the Auxiliary Air Force (May 21).

The follg. are granted commissions in Class AA (ii) as Pilot Officers on probation :—J. D. Tucker (June 6); F. G. Frow (Aug. 29).

The follg. Pilot Officers on probation are confirmed in rank :—Sir A. P. Hope, Bart. (July 13); R. W. Aitken (Aug. 10).

The follg. Flying Officers are transferred from Class C to Class A :—S. R. Sherman (Aug. 7); J. W. Duggan (Aug. 22); G. H. G. S. Jenkins (Aug. 26).

Flying Officer A. K. Bamber relinquishes his commission on completion of service (Sept. 10); Flying Officer S. G. Newport relinquishes his commission on completion of service and is permitted to retain his rank (Sept. 12).

## AUXILIARY AIR FORCE

### General Duties Branch

No. 800 (CITY OF LONDON) (BOMBER) SQUADRON.—Pilot Officer G. W. Bennett resigns his commission (May 21).

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified :—

### General Duties Branch

**Wing Commander:** G. W. Robarts, M.C. to Station Headquarters, Abingdon, 1.9.32. To command.

**Flight Lieutenants:** V. B. J. Jackson, to No. 24 (Communications) Squadron, Northolt, 5.9.32. G. R. M. Clifford, to Air Ministry, Dept. of A.M.P. (D. of P.), 1.9.32. A. J. Warwick, to No. 15 (B) Squadron, Martlesham Heath, 19.8.32. F. Wright, to No. 207 (B) Squadron, Bircham Newton, 6.9.32. J. W. Turton Jones, to Station Headquarters, Tangmere, 7.9.32. E. B. Addison, to Central Flying School, Wittering, 6.9.32. C. H. Appleton, to No. 501 (City of Bristol) (B) Squadron, Filton, 6.9.32.

**Flying Officers:** C. W. F. Carter, to No. 1 Armament Training Camp, Catfoss, 31.8.32. E. O. Wanliss, to No. 26 (A.C.) Squadron, Catterick, 1.9.32. A. G. Lester, to R.A.F. Base, Gosport, 5.9.32. R. C. Field, to School of Army Co-operation, No. 16 (A.C.) Squadron, Old Sarum, 6.9.32. C. W. W. S. Conway, to No. 2 (A.C.) Squadron, Manston, 8.9.32.

**Pilot Officers:** R. H. A. Leigh, to R.A.F. Base, Gosport, 4.9.32. L. N. Elsner, to R.A.F. Base, Gosport, 4.9.32. J. T. Longman to R.A.F. Base, Gosport, 4.9.32. G. V. Barber, to No. 14 (B) Squadron, Amman, Palestine, 27.8.32. G. C. Tomlinson, to No. 2 Flying Training School, Digby, 29.8.32. For flying training. On appointment to a Permanent Commission.

**Acting Pilot Officers:** The undermentioned Acting Pilot Officers are posted to Royal Air Force Depot, Uxbridge, 2.9.32. For short disciplinary course. On appointment to Short Service Commissions (on probation).—P. B. H. Butler, W. G. Devas, W. B. Fleming, D. W. H. Gardner, W. H. Gerrard, E. P. F. Gibbs, G. J. Grindell, H. V. Kennedy, P. C. Lawrence, J. S. Leslie, J. S. McLean, J. C. Mole, G. A. M. Pryde, D. S. Radford, O. W. W. Reed, J. R. L. Rumsey, P. H. P. Simonds, E. L. A. Walter and C. H. T. Warner.

### Stores Branch

**Flight Lieutenants:** F. R. Lines, to Station Headquarters, Tangmere, 10.9.32. J. H. Barnes, to No. 4 (A.C.) Squadron, South Farnborough, 6.9.32.

### Medical Branch

**Squadron Leaders:** R. J. Aherne, M.C., to Headquarters, Wessex Bombing Area, Andover, 9.9.32. For duty as Medical Officer. T. J. X. Canton, to Headquarters, Coastal Area, Lee-on-the-Solent, 12.9.32. For duty as Deputy Principal Medical Officer vice F/Lt. (Hon. S/Ldr.) C. A. E. I. Brownlee. **Flying Officer:** J. F. Dales, to Station Headquarters, Mount Batten, 6.9.32.

## NAVAL APPOINTMENTS

The following appointments have been made by the Admiralty :—**Lieut.** (Flying Officer, R.A.F.).—E. H. Shattock, to *Victory* (Sept. 19). **Lieut.** (Flight Lieut., R.A.F.).—E. B. Carnduff, to *Victory* for R.A.F. Base, Gosport, for course (Sept. 19), and on re-attachment to R.A.F., and to *Glorious*, for 447 Flight, in command (on completion). **Sub-Lieut.**—E. G. Clutton, attached to R.A.F. (Sept. 18).

### Promotions

**Lieut.** (Flt. Lt., R.A.F.) J. B. Heath to Lieut. Comdr., Sept. 15. **Lieut.** (F/O, R.A.F.) G. C. Dickens to Lieut. Comdr., Sept. 15.

## ROYAL AIR FORCE

**Flying Officer.**—J. Y. Humphreys, to *Courageous* (No. 450 F.S.R. Flight) (Sept. 9).

## The Westland "Wallace"

THE Air Ministry have passed an order for twelve Westland "Wapitis" to be converted into the "Wallace" general-purpose type. When the conversion has been completed these machines will doubtless be used to equip some squadron, probably one of the squadrons of the Auxiliary Air Force. When the name "Wallace" was adopted for the Westland P.V.6 some weeks ago, we pointed out that names were not normally sanctioned by the Air Ministry for new types of Service aircraft, unless it had been decided to use the type as equipment for some R.A.F. unit. We congratulate the Westland Aircraft Works on the success of their new type.

## "Harts" for Auxiliary Squadrons

It has been decided that No. 600 (City of London) and No. 601 (County of London) Bomber Squadrons of the Auxiliary Air Force are to be equipped with "Hart" bombers instead of with "Wapitis." The pilots of the A.A.F. have amply proved themselves fit to be entrusted with the same types of machines as the regular Royal Air Force, and they are now to receive this reward for all their excellent hard work. At the same time, it must not be forgotten that the majority of the bomber and army co-operation squadrons overseas are equipped with the "Wapiti," and some of them may soon have the "Wallace" in its stead; so it cannot be said that the A.A.F. have been slighted by having had the use of the excellent "Wapiti" for the past few years.

## Ground Engineers' Licences: Facilities for Extension or Renewal Abroad

ACCORDING to G.E.'s Notice No. 43 of the year 1932 facilities for the variation or renewal of ground engineers' licences issued by the Air Ministry have been provided at Cairo, Kisumu and Pretoria. Ground engineers holding Air Ministry licences who are operating on or in the vicinity of the undermentioned Imperial Airways' routes, and who are responsible for the maintenance, overhaul and/or repair of aircraft registered in Great Britain and Northern Ireland, should apply for variation or renewal of their licences to the local Air Ministry representatives as indicated below, and not direct to the Air Ministry in London.

Division of Imperial Airways' Route	Air Ministry Representative
Mediterranean : Brindisi-Alexandria and Brindisi-Tiberias.	British Civil Aviation Directorate Representative in Egypt, Heliopolis Aerodrome, Egypt.
Near East : Cairo-Karachi .. ..	
North Africa : Cairo-Khartoum .. ..	
East and Central Africa : Khartoum-Bulawayo .. ..	British Civil Aviation Directorate Representative in East Africa, Kisumu, Kenya Colony.
South Africa : Bulawayo-Cape Town	The Secretary, Civil Aviation Department of Defence, Roberts Heights, Pretoria, South Africa.

Ground engineers holding Air Ministry licences should notify the Air Ministry of their transfer to service abroad, and also their transfer from service abroad to home employment.

## Pobjoy Developments

CAPT. I. C. MAXWELL has just left England on a Continental sales tour in connection with the Pobjoy engine. He is flying a Pobjoy-engined Comper "Swift" and intends visiting Brussels, Antwerp, Rotterdam, Amsterdam, Hamburg, Berlin, Kassel and Paris. He will see about 70 aircraft and engine constructors in all, and there is every indication on account of this tour of disposing of our French manufacturing licence to a well-known Paris firm. It may be of interest to note here that the organisation of Pobjoy Airmotors, Ltd., is now as follows:—Capt. I. C. Maxwell, Joint Managing Director and Secretary; D. R. Pobjoy, Joint Managing Director and General Manager; C. F. Caunter, Sales Manager.

As a result of the examination in the Pobjoy shops at Hooton of a number of Pobjoy "R" engines, it has been decided to increase the period between complete overhauls from 300 to 450 hr. The engines examined had run for more than 500 hr., and their condition was such as to indicate that a period of 450 hr. would be quite permissible. In view of the fact that the Pobjoy "R" engine is of the high-speed type, this speaks well not only for the soundness of the design but also for the qualities of the materials used and the workmanship put into the engines during manufacture. The increased permissible period between overhauls should further strengthen the reputation of this excellent little power plant. That this reputation is spreading abroad as well as at home is shown by the fact that negotiations are proceeding with several foreign firms for the building of the engine under licence, while we understand that Pander & Zoonen, of The Hague, have standardised the Pobjoy "R" engine for a new monoplane which they are bringing out.

## Kestrel Engine's 500 Hours without Overhaul

THE Aeronautical Inspection Department's report on three Rolls-Royce "Kestrel"-type aero engines, which had done running service for 500 hr. without overhaul instead of the usual 400, has resulted in the Air Ministry recommending that 500 hr. should be the standard service practice for this type of engine. A committee of experts, in conjunction with the representatives of the Fighting Service, carried out a minute inspection of the entire engine and its condition was stated to be "highly satisfactory," the cost of the renewal of parts due to wear or damage by handling being under 4 per cent. of the total cost of the engine. Up to now the standard running life of a Kestrel engine was fixed at 400 hr., but as it was found that the renewals for this period were practically negligible, it was decided to take three engines at random and run them for 500 hr. as a test. Recommendation to consider this period as standard in the future is due directly to the result of this test and can be considered a remarkable achievement of British aero-engine construction. 500 hr. flying is equivalent to approximately 75,000 miles.

## Polish Type Test on "Jupiter" Supercharged Engine

A "JUPITER" Series VII.F supercharged engine constructed by Polskie Zakłady Skody, of Warsaw, to the order of the Polish Government, who hold a licence for the manufacture of Bristol type aero engines in Poland, has recently completed a successful type test of 100 hr. The total running time during the eight days occupied by the test was 115 hr. 35 min., comprising some 40 hr. on the Froude dynamometer and 7½ hr. on a calibrated airscrew, the balance being occupied by preliminary runs for warming-up purposes. The whole series of tests were run through without a hitch or interruption of any kind, and the report says that "During the tests no troubles or defects occurred and the inspection of the engine after the test showed all the components to be in a perfect condition." Of the direct drive, fully supercharged type, the Jupiter VII.F is an engine of which large numbers have been built for use in various high-performance aircraft in many countries. It is, of course, the engine exclusively fitted in the famous Bristol "Bulldog" single-seater of the Royal Air Force and several foreign air services. It is of interest to note that the Polish Government has taken a licence to manufacture the latest Bristol "Mercury" IV.S.2 engine, this being most suitable for fast single-seaters. Production of this engine at Warsaw is now proceeding apace.

## De Havilland's Free State Agents

INDUSTRIAL VEHICLES (IRELAND), LTD., Athy, County Kildare, of which Capt. H. J. Hosie (a prominent member of the Irish Aero Club) is a director, have been appointed Irish Free State agents for de Havilland aircraft, engines and spares.

## Imperial Defence College

It is announced that Group Capt. W. Sholto Douglas, M.C., D.F.C., has been appointed R.A.F. Instructor at the Imperial Defence College in succession to Group Capt. B. E. Sutton, D.S.O., O.B.E., M.C.

## The Iraq Flying Corps

It has been decided that each of the 14 provinces of Iraq shall provide by public subscription for the cost of one aeroplane for the Flying Corps of the Iraq Army. It is not stated whether all the 14 machines are to be of the same type. If not we can imagine great competition among the provinces to be let off with a "Moth" instead of being asked for the price of a "Victoria."

## Kenley Aerodrome

THE barracks and hangars on Kenley aerodrome are to be rebuilt at a cost of £60,000, and the work will take about two years. Biggin Hill has been reconditioned in the same way, and the barracks now appear adequate to house members of the Royal Air Force as they ought to be housed. The two squadrons which were stationed at Kenley, Nos. 23 and 32 (Fighter) Squadrons, have now moved to Biggin Hill, and in all probability that will now become their permanent station. The mess at Kenley was originally built to accommodate a Group Headquarters, and is one of the few really adequate Royal Air Force buildings in existence, but the other buildings on the aerodrome are not equally good.

## A Correction

We are informed that on his flight to Kenya in a Waco VP-KAP, Mr. Norman Turner is lubricating his Wright "Whirlwind" with Mobiloil Aero H and not Shell oil as inferred in our issue for September 9. He is, however, using Shell Spirit. The Vacuum Oil Co. have arranged his supplies of oil en route.



## PUBLICATIONS RECEIVED

- The I.I.F. (F.A.A.) Aeroplane (3-seater Fleet Air Arm Type) Lion XIA Engine.* Air Publication 1336. London: H.M. Stationery Office, W.C.2. Price 2s. 6d. net.
- Aeronautical Research Committee Reports and Memoranda: No. 1432. Single Crystals of Bismuth subjected to Alternating Torsional Stresses.* By H. J. Gough and H. L. Cox. December, 1930. Price 1s. 6d. net.
- Aeronautical Research Committee Reports and Memoranda: No. 1459. Interference on Characteristics of Aerofoil in Wind Tunnel of Rectangular Section.* By H. Glauert. February, 1932. Price 6d. net.
- Avion Hélicoptère à Hélices Orientables.* By L. Marmonier, 146, Avenue Felix-Faure, Lyons, France.
- Survey of the Import Trade of India, 1st April to 30th June, 1932.* Department of Overseas Trade, No. C.3979. London: H.M. Stationery Office, W.C.2.
- Journal of the Royal Aeronautical Society.* September, 1932. The Royal Aeronautical Society, 7, Albemarle Street, London, W.1. Price 3s. 6d.
- The I.I.F. (G.P.) Aeroplane (2-Seater General Purpose Type) Lion XIA Engine.* Air Publication 1351. Vol. I. Price 2s. 6d. net. London: H.M. Stationery Office, W.C.2.
- Aeronautical Research Committee Reports and Memoranda No. 1434. Hot Wire and Spark Shadowgraphs of the Airflow through an Airscrew.* By H. C. H. Townend. September 1931. Price 1s. 3d. net.

## CATALOGUES

- Kodak Professional Photographic Apparatus and Materials; 1933.* Kodak, Ltd., Kingsway, London, W.C.2.
- The Royal Air Force Book of Jewellery.* Gieves, Ltd., 21, Old Bond Street W.1.



## INCREASE OF CAPITAL

GRAVESEND AVIATION, LTD. (30, Newgate Street, E.C.)—The nominal capital has been increased by the addition of £16,400 beyond the registered capital of £100. The additional capital is divided into 15,000 ten per cent. redeemable preference shares of £1 each, and 28,000 ordinary shares of 1s. each.



## AERONAUTICAL PATENT SPECIFICATIONS

**Abbreviations:** Cyl. = cylinder; i.c. = internal combustion; m. = motors. (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

### APPLIED FOR IN 1931

*Published September 15, 1932*

- 25,454. L. MARMONIER. Navigating apparatus for aeroplanes. (379,109.)  
27,657. J. H. McCULLOUGH. Driving mechanism of aircraft engines. (379,125.)  
34,862. A. E. NOBLE. Toy aeroplane. (379,178.)

*Published September 22, 1932*

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